ASIAN DEVELOPMENT BANK

PCR: PRC 29200

PROJECT COMPLETION REPORT

ON THE

FANGCHENG PORT DEVELOPMENT
(Loan 1427-PRC)

IN THE

PEOPLE'S REPUBLIC OF CHINA

September 2002

CURRENCY EQUIVALENTS

Currency Unit – yuan (CNY)

	At Appraisal (31 August 1995)	At Project Completion 24 May 2002
CNY1.00 =	$0.12	$0.12
$1.00 =	CNY8.35	CNY8.28

ABBREVIATIONS

ADB	-	Asian Development Bank
EIRR	-	economic internal rate of return
FCPA	-	Fangcheng Port Authority
FIRR		financial internal rate of return
GCD	-	Guangxi Communications Department
GEAB	-	Guangxi Expressway Administration Bureau
GZAR	-	Guangxi Zhuang Autonomous Region
PMO	-	Project Management Office
PRC	-	People's Republic of China
TA	-	technical assistance
VOC	-	vehicle operating cost
WACC	-	weighted average cost of capital

WEIGHTS AND MEASURES

AADT	-	Average Annual Daily Traffic
dwt	-	deadweight tons – the total carrying capacity of a ship, including cargo, fuel, water and stores.
km	-	kilometer
m	-	meter
teu	-	twenty foot equivalent unit – A standard unit of measurement for container traffic
ton	-	internal capacity of ships equal to 100 cubic feet
tph	-	tons per hour – the rated capacity of bulk cargo handling equipment

NOTES

(i) The fiscal year (FY) of the Government coincides with the calendar year.
(ii) In this report, "$" refers to US dollars.

CONTENTS

BASIC DATA

A. Loan Identification

1.	Country	People's Republic of China
2.	Loan Number	1427-PRC
3.	Project Title	Fangcheng Port
4.	Borrower	People's Republic of China
5.	Executing Agency	Fangcheng Port Authority Guangxi Communications Department
6.	Amount of Loan	$52.0 million
7.	PCR Number	PCR:PRC 697

B. Loan Data

1.	Appraisal	
	- Date Started	21 August 1995
	- Date Completed	31 August 1995
2.	Loan Negotiations	
	- Date Started	30 October 1995
	- Date Completed	3 November 1995
3.	Date of Board Approval	18 January 1996
4.	Date of Loan Agreement	15 January 1997
5.	Date of Loan Effectiveness	
	- In Loan Agreement	April 1997
	- Actual	20 June 1997
	- Number of Extensions	one (1)
6.	Closing Date	
	- In Loan Agreement	31 December 1999
	- Actual	15 October 2001
	- Number of Extensions	1
7.	Terms of Loan	
	- Interest Rate	Pool-based variable lending for US Dollars
	- Maturity (number of years)	24
	- Grace Period (number of years)	4
8.	Terms of Relending	
	- Interest Rate	Pool-based variable lending for US Dollars
	- Maturity (number of years)	24
	- Grace Period (number of years)	4
	- Second-Step Borrower	

9. Disbursements

a. Dates

Initial Disbursement	Final Disbursement	Time Interval
23 September 1997	15 October 2001	4 years, 1 month

Effective Date	Original Closing Date	Time Interval
20 June 1997	31 December 1999	2 years, 5 months

b. Amount ($)

Category No.	Description	Original Allocation	Last Revised Allocation	Amount Canceled[a]	Net Amount Available	Amount Disbursed	Undisbursed Balance
I	Construction Materials	5,300,000	7,460,000	(4,876)	7,464,876	7,464,876	0
	a. Port Component	2,000,000	1,810,000	21,157	1,788,843	1,788,843	0
	b. Highway Component	3,300,000	5,650,000	(26,033)	5,676,033	5,676,033	0
II	Equipment	36,200,000	29,620,000	1,733,512	27,886,488	27,886,488	0
	a. Port Component	23,000,000	17,830,000	1,078,161	16,751,839	16,751,839	0
	b. Highway Component	13,200,000	11,790,000	655,351	11,134,649	11,134,649	0
III	Consulting Services	100,000	100,000	100,000	0	0	0
IV	Training	800,000	660,000	(59,520)	719,520	719,520	0
V	IDC[b]	4,200,000	4,200,000	0	4,200,000	4,200,000	0
VI	Contingency	5,400,000	1,460,000	1,460,000	0	0	0
VII	Imprest Account			(20)	20	20	0
	Total	52,000,000	43,500,000	3,229,096	40,270,904	40,270,904	0

[a] Canceled on 15 October 2001.
[b] IDC=interest during construction

10. Local Costs (ADB-Financed)

- Amount (dollars) 0
- Percentage of Local Costs 0
- Percentage of Total Costs 0

C. Project Data

1. Project Cost ($ million)

Cost	Appraisal Estimate	Actual
Foreign Exchange Cost	62.00	43.27
Local Currency Cost	73.00	54.25
Total Cost	**135.00**	**97.52**

2. Financing Plan ($ million)

Cost	Appraisal Estimate			Actual		
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total
Implementation Costs						
Borrower financed	9.30	68.50	77.80	3.00	50.40	53.40
ADB financed	48.00	0.00	48.00	36.07	0.00	36.07
Subtotal	**57.30**	**68.50**	**125.80**	**39.07**	**50.40**	**89.47**
IDC Costs						
Borrower financed	0.70	4.50	5.20	0.00	3.85	3.85
ADB financed	4.00	0.00	4.00	4.20	0.00	4.20
Subtotal	**4.70**	**4.50**	**9.20**	**4.20**	**3.85**	**8.05**
Total	**62.00**	**73.00**	**135.00**	**43.27**	**54.25**	**97.52**

ADB = Asian Development Bank

3. Cost Breakdown by Project Components ($ million)

Item	Appraisal Estimate			Actual		
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total
Port Component						
(a) Civil Works	7.30	21.30	28.60	1.79	24.00	25.79
(b) Equipment	23.00	8.10	31.10	16.75	0.50	17.25
(c) Land Acquisition	0.00	0.00	0.00	0.00	0.00	0.00
(d) Supervision and Training	0.50	2.00	2.50	0.28	2.40	2.68
(e) Contingencies	4.80	11.20	16.00	0.00	0.30	0.30
(f) IDC	3.40	4.50	7.90	1.13	3.85	4.98
(g) Taxes & Duties	-	2.90	2.90	0.00	0.00	0.00
Sub-total	**39.00**	**50.00**	**89.00**	**19.95**	**31.05**	**51.00**
Highway Component						
(a) Civil Works	5.70	10.10	15.80	8.68	13.30	21.98
(b) Equipment	12.70	4.30	17.00	11.13	6.40	17.53
(c) Land Acquisition	0.00	0.90	0.90	0.00	1.10	1.10
(d) Supervision and Training	0.40	0.20	0.60	0.44	0.20	0.64
(e) Contingencies	2.90	5.90	8.80	0.00	0.00	0.00
(f) IDC	1.30	0.00	1.30	3.07	0.00	3.07
(g) Taxes & Duties	0.00	1.60	1.60	0.00	2.20	2.20
Sub-total	**23.00**	**23.00**	**46.00**	**23.32**	**23.20**	**46.52**
Total	**62.00**	**73.00**	**135.00**	**43.27**	**54.25**	**97.52**

4. Project Schedule

Item	Appraisal Estimate	Actual
Date of Contract with Consultants	November 1995	Not recruited
Completion of Engineering Design	September 1995	September 1996
Civil Works Contract		
Date of Award	January 1996	February 1996
Completion of Work	June 1999	October 2001
Equipment and Supplies		
Dates		
First Procurement	March 1996	December 1995
Last Procurement	June 1999	June 2001
Completion of Installation	June 2000	June 2001
Start of Operations	May 1998	November 1998

Project Performance Report Ratings: From May 1999 to April 2001 the development objectives is partly satisfactory and the implementation progress is satisfactory. From May 2001 to October 2001 the development objectives is satisfactory and the implementation progress is satisfactory.

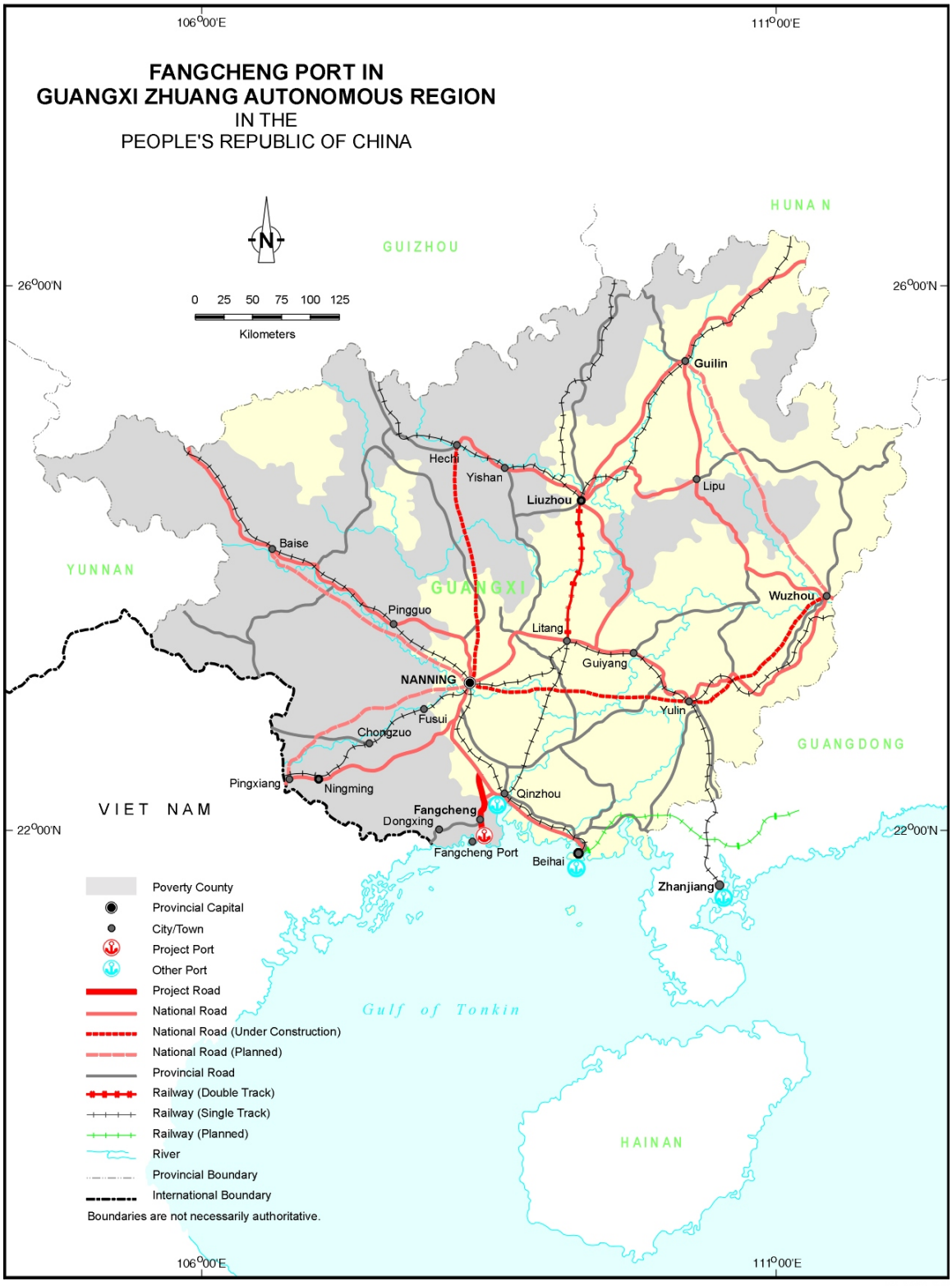
D. Data on ADB Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members[a]
Fact-finding	13-27 January 1995	6	90	a.a, b,d,g,j
Appraisal	21-30 August 1995	5	50	a,a,b,c,d
Inception	5 – 9 February 1996	1	5	a
Review 1	3 – 5 December 1996	2	6	a, k
Review 2	29 October – 1 November 1997	2	8	a,a
Review 3	15-27 July 1998	2	26	a, a,
Review 4	20-24 April 1999	1	5	a
Review 5	23-27 May 2000	1	5	a
Review 6	18 – 24 April 2001	2	14	a,e
Project Completion Review[b]	14 – 24 May 2002	11	33	a,b,k

[a] a-engineer; b-financial analyst; c-counsel; d-economist; e-consultant specialist; f-control officer; g-programs officer; h-manager, i-environment specialist, j-young professional, k-assistant analyst.

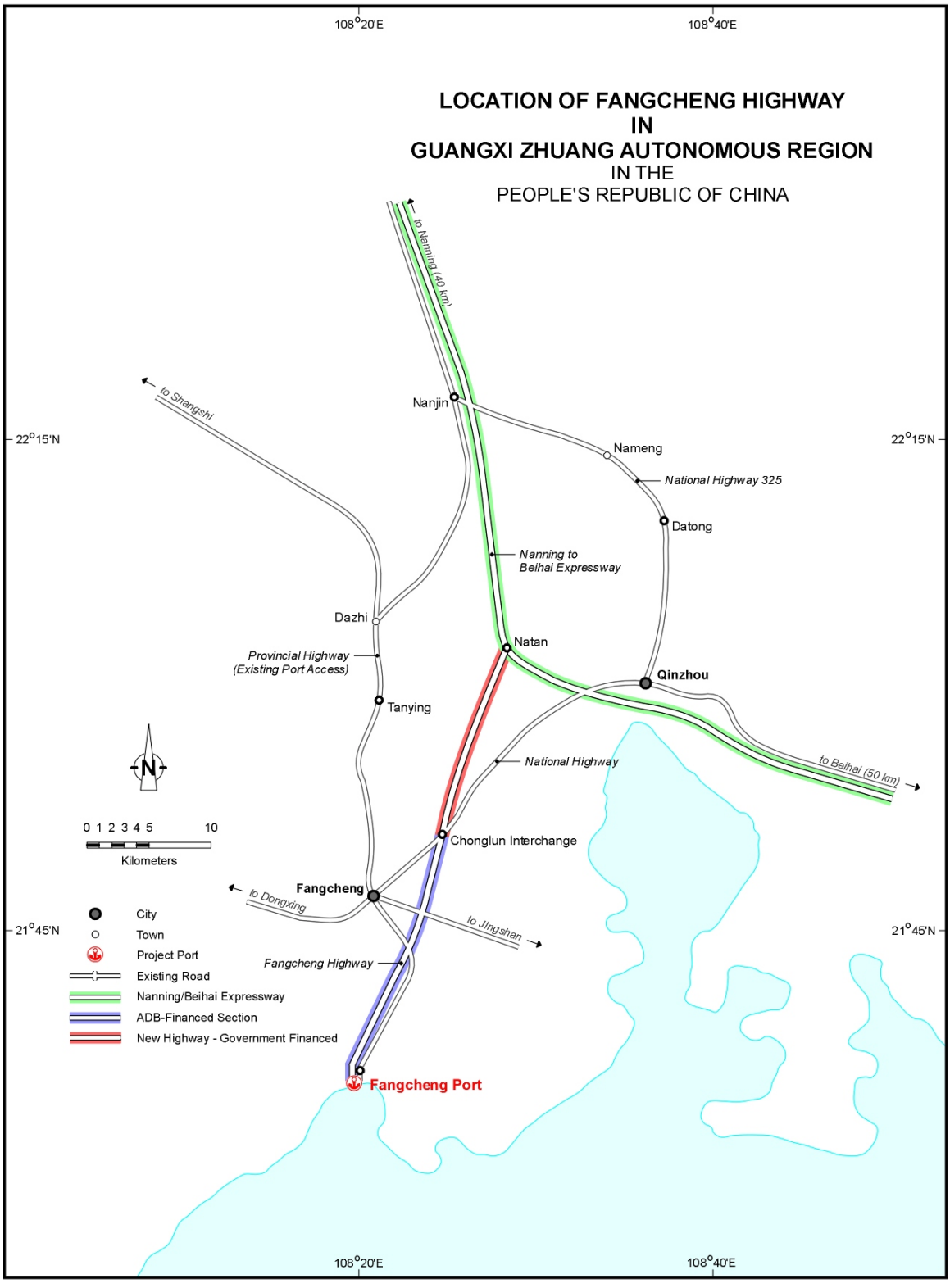
[b] The Mission comprised K. Jraiw, Transport Specialist Mission Leader; Ms. Hiromi Sakurai, Financial Analyst; and E. Infante, Assistant Project Analyst.

Map 1 v

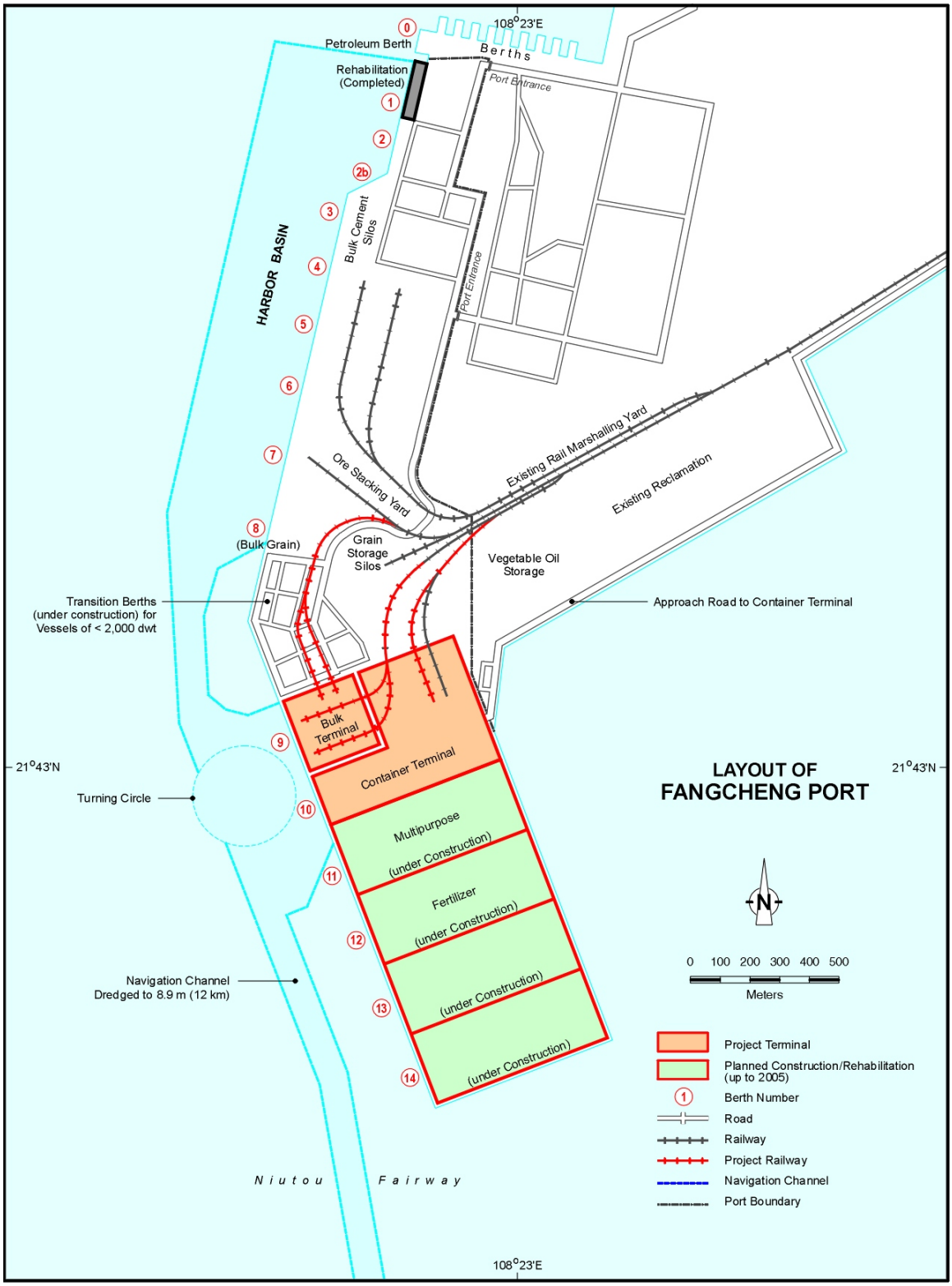


02-1759a HR

Map 2



02-1759c HR


LAYOUT OF
FANGCHENG PORT
108°23'E
21°43'N
Petroleum Berth
Berths
Rehabilitation (Completed)
Port Entrance
HARBOR BASIN
Bulk Cement Silos
Port Entrance
Existing Rail Marshalling Yard
Existing Reclamation
Ore Stacking Yard
(Bulk Grain)
Grain Storage Silos
Vegetable Oil Storage
Transition Berths (under construction) for Vessels of < 2,000 dwt
Approach Road to Container Terminal
Bulk Terminal
Container Terminal
Multipurpose (under Construction)
Fertilizer (under Construction)
(under Construction)
(under Construction)
Turning Circle
Navigation Channel Dredged to 8.9 m (12 km)
Niutou Fairway
0 100 200 300 400 500
Meters
Project Terminal
Planned Construction/Rehabilitation (up to 2005)
Berth Number
Road
Railway
Project Railway
Navigation Channel
Port Boundary

02-1759b HR

I. PROJECT DESCRIPTION

1. Economic reforms undertaken in the People's Republic of China (PRC) since 1978 have resulted in rapid development of the areas surrounding ports, generating increased volumes of trade, and necessitating expansion of port capacities to cope with the increase in traffic and to improve efficiency. To cope with the increasing demand for transport services, and to remove constraints in the road network, in 1991 the Government launched a 30-year program to build a 35,000 km network of high-grade national trunk highway system (NTHS) comprising five north-south expressway corridors, and seven east-west expressway corridors. The NTHS will connect all major provincial capitals and other cities with a population of over 500,000. Similar program was also launched to improve port operations. This will provide access and service to underdeveloped areas and poor communities living in the hinterland, thus strengthening their linkage to the mainstream economy and associated markets.

2. The Fangcheng Port Project's rationale was to promote the economic growth of the poor areas of Guangxi Zhuang Autonomous Region (GZAR) as well as the western region of the PRC by addressing transport constraints through increased port capacity, modernized operations, and improved transport linkages to the hinterland of Fangcheng Port.[1] The Project aimed to remove physical constraints on the growth of foreign and domestic trades, and to enhance cost recovery. The scope of the Project included (i) a port component for $32.0 million to construct a one-berth container terminal and a one-berth bulk cargo terminal at Fangcheng Port; (ii) a highway component for $20.0 million to construct a 20-kilometer (km) stretch of the 45 km two-lane port access expressway connecting the port with Nanning by way of Natan; and (iii) support for policy reforms in port pricing, management efficiency and autonomy, human resources development, and strengthening of port and highway planning institutions, construction, and operation and maintenance.

3. The feasibility study for the Project was completed in 1994, and was reviewed under an Asian Development Bank (ADB)-financed project preparatory technical assistance (TA) for the *Second Ports Development Project.*[2] ADB then approved a loan of $52.0 million for the Project from its ordinary capital resources on 18 January 1996 to finance 38.5% of the total $135.0 million cost of the Project. The Loan Agreement was signed on 15 January 1997, and the loan was declared effective on 20 June 1997. The loan closing date was extended by 18 months from 31 December 1999 to 30 June 2001. The Guangxi Communications Department (GCD) was responsible for the implementation of the highway component, while the Fangcheng Port Authority (FCPA) was responsible for the port component. Map 1 gives the location and Appendix 1 contains a chronology of major events related to the Project.

4. The Project achieved its objective within the cost estimated at appraisal. The scope of the Project remained generally unchanged from that envisaged at appraisal, except for additional procurement of highway construction materials approved by ADB. The Project Framework is attached as Appendix 2.

---

[1] ADB. 1996*. Report and Recommendation of the President to the Board of Directors on the Proposed Loan to the People's Republic of China for the Fangcheng Port Project*. Manila.

[2] ADB. 1993*. Technical Assistance to the People's Republic of China for the Second Ports Development Project*. Manila.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

5. Rapid socioeconomic development in the PRC is straining all of the country's transport modes and is being addressed by the development of key ports, road corridors, and railway networks. In 1993, the Project was selected for ADB financing because it would enhance access for the communities in the less developed interior provinces. The hinterland of the Fangcheng Port includes GZAR and the provinces of Guizhou and Yunnan, which are among the poorest in the central and western parts of the PRC, with about 30% of the country's absolute poor. The three strategic objectives of ADB's operations in the PRC were (i) economic efficiency, (ii) poverty reduction, and (iii) environmental protection and resource conservation. In the ports sector, the priority was to mobilize capital resources to finance the construction of additional berths, to install modern cargo-handling facilities and equipment, and to make transport and distribution in the hinterland more efficient through integrating the transport networks and restructuring institutions.

6. ADB has been supporting the Government's policy on integrated transport sector development and its program on the implementation of port projects since 1991. The principles of ADB's strategy for port restructuring in the PRC remain basically the same as described in the *Report and Recommendation of the President* in 1995. The policy dialogue undertaken with the Government at appraisal concentrated on the following:[3] (i) developing integrated trade arrangements to facilitate efficient distribution in the inland areas, mainly by addressing logistics such as different modes and electronic data interchange controls at the ports; (ii) more efficiently linking the ports to their hinterlands and national transportation corridors by selective investment in complementary infrastructure in highway, rail, and inland waterways; and (iii) supporting the emergence of competition between ports at the overlapping margins of the port hinterlands.

7. The Project's design was generally sound and the formulation process was adequate. Stakeholders were consulted by means acceptable to ADB in planning, design, and implementation. The project scope was determined in consultation with various departments and interested groups, local leaders, and Central Government. The implementation arrangements devised under the project preparatory TA (footnote 2) were satisfactory. The technical, quantifiable benefits from the Project consist of saved ship time in port; minimized cargo-handling cost; and increased capability, reduced vehicle operating costs, and time saving in highway transport.

8. The Project was developed in the context of a wider government strategy to reduce poverty in the southwestern part of the PRC, which is also supported by ADB through its country strategy. The Project will increase income-generating opportunities for the poor by improving access to market-oriented activities and economic wealth, social and educational services, and basic health care.

[3] The criteria were based on the outcome of the 1993 international seminar on Port Investment and Competition, which was financed by ADB as a component of an earlier TA, described in the document: ADB. 1991. *Port Management and Operations.* Manila.

B. Project Outputs

9. The port and highway components were fully completed as estimated at appraisal. The scope of the project components at appraisal and of the works executed is described in Appendix 3.

1. Port Component

10. The port component at appraisal comprised two principal initiatives. The first involved civil works for the construction of a dedicated container terminal (no. 10) and for a multipurpose bulk cargo terminal (no. 9), each having one berth with a combined length of 486 linear meters (m) with an alongside depth of 11.65 m; backup operational and open storage areas totaling 250,000 m^2; dredging of the port approach channel to depth of 8.9 m and width of 120 m; expansion of the port rail marshaling area and sidings with a total length of 8.4 km; construction of about 48,000 m^2 of related port buildings; and ancillary services. The second part dealt with procurement of container-handling equipment including two units of 40-ton gantry cranes, four yard cranes, fork lift trucks, tractors, and trailer units; various container-servicing equipment, including a computer control system, bulk cargo-handling equipment, bucket unloaders, two stackers and a belt conveyor, bulldozers and wheel loaders, power substation, and environmental protection equipment. The port component financed under the ADB loan was fully implemented as estimated at appraisal.

2. Highway Component

11. At appraisal, the highway component comprised construction of a 20 km section of the 45 km long, 24.5 m wide four-lane dual carriageway linking Fangcheng Port with the Nanning to Beihai expressway. It also covered procurement of highway construction equipment and materials such as bulldozers; excavators; graders; drills; loaders; maten machines; and toll, communication, and monitoring systems.

C. Project Costs

12. The Project was estimated at appraisal to cost $135.0 million equivalent, including contingencies and interest and other charges during construction. The foreign exchange cost was $62.0 million (46%) and the local currency cost was $73.0 million equivalent (54%). The actual project base cost (excluding interest during construction, contingencies, and tax) is now $89.5 million equivalent, with a foreign exchange cost of $39.1 million, and a local currency cost of $50.4 million equivalent.

13. The planned sources of construction funds were $30.0 million of loans from the State Development Bank, $52.0 million from ADB, $27.5 million in grants from GCD, $9.0 million in grants from Fangcheng Gang municipal government, $8.5 million of internal funds from FCPA, and an $8.0 million grant from the Ministry of Communications. Interest on the ADB loan is determined in accordance with ADB's pool-based variable lending rate system for United States dollar-denominated loans, and has an amortization of 24 years, including grace period of 4 years. The loan carries a commitment fee of 0.75% per annum. A summary of the financing plan and funds available is shown in Appendix 4.

14. The cost increase due to the procurement of additional highway construction material has been accommodated under the contingencies for the local currency portion, from $17.0 million at appraisal to $17.5 million. The final cost of ADB-financed components was

$40.3 million, compared with $52.0 million at appraisal.[4] The $11.7 million savings from ADB loan proceeds were cancelled at two stages. About $8.5 million, which is mainly from the port component, was cancelled by FCPA on 30 March 2001, prior to the loan closing date, and an undisbursed amount of $3.2 million was cancelled on 15 October 2001, after the loan closed. No loan proceeds were reallocated.

15. The major causes of savings were as follows: (i) undertaking a competitive bidding process in the selection of civil works contractors and in procurement of equipment; (ii) unused contingencies; and (iii) changes in the acquisition of part of the equipment. The harbor vessel was planned to be procured at an estimated cost of $2.7 million. The Executing Agency decided to lease a tug with a capacity of 3,600 horsepower from the domestic market instead of buying one. The tug has been able to meet demand for berthing and departure at the new no. 9 and 10 terminals, and it was procured using government resources.

D. Disbursements

16. The loan proceeds were disbursed in accordance with ADB guidelines on loan disbursement. The accounting staff of the executing agencies had received training in ADB disbursement procedures. Most of the contracts for project goods and services, including international training, were disbursed under direct payment procedures. The disbursements were on a timely basis. An amount of $40.3 million was finally withdrawn before the loan closing date, including $20.3 million for the highway component and $19.9 million for the port component.

E. Project Schedule

17. The Project was appraised in 1995. The total implementation period was scheduled to be 4 years, from 1995 to 1999. Project completion was planned for 30 June 1999. The loan closing originally was set for 30 December 1999. The Loan Agreement was signed on 15 January 1997 and became effective on 20 June 1997.

18. Port construction commenced on 8 August 1997. The master works (marine structure and dredging) of the Project were completed in October 1999. Installation was completed in October 2001, at which time began trial operation of the largest handling equipment: quayside container cranes. The port component's implementation fell behind the schedule envisaged at appraisal for about 18 months.

19. The delay in the port component implementation was due to several factors. One was the unfamiliarity of the executing agencies with ADB procedures procurement requirements and guidelines. This lack of knowledge resulted in slow formulation of the required documents and actions within GCD and provincial and central governments, as well as a delay in loan signing. Delays in equipment procurement and approval were due to long discussions between the Executing Agency and ADB over adjustments to the equipment list, which lasted about 9 months. There was late finalization of bidding documents, procurement, and completion of installation (till July 2001) of power supply equipment, which affected the early operation of part of the other facilities including handling equipment. Failure of some equipment suppliers to

[4] The total project cost including the Borrower-financed section was $126 million against $107 million at appraisal of which the base cost was $88 million. The actual cost for the Borrower-financed section exceeded the appraisal estimate due mainly to a large equipment cost representing 20% of the total project cost.

deliver goods and complete installation in accordance with the contracted schedules furthered the delay. A summary of the equipment procured and civil works packages is in Appendix 5.

20. Since the existing access road to the port was of low grade and unable to serve the normal operation of the port, the GCD insisted on speeding up the construction of the access highway component. The highway component of the Project, therefore, commenced in advance, in August 1995, with ADB approval. The highway was completed and opened for traffic in November 1998. The highway has passed the final acceptance requirements of the Ministry of Communications, and was rated as "Excellent" in January 1999. The loan closing date was extended for 18 months from 30 December 1999 to 30 June 2001, in order to meet the overall project objectives and to overcome the delay in the procurement of handling equipment due to the delay in the bid evaluation procedures. The actual and envisaged schedules are compared in Appendix 6.

F. Implementation Arrangements

21. GCD, the functional organization of the GZAR government, was responsible for the overall project coordination and supervision during the implementation, and acted as the main liaison with ADB. A project management office (PMO), known as the Fangcheng Port Berths 9 and 10 Construction Headquarters, was officially established within FCPA in November 1996. The head of the PMO is the director of FCPA, and a senior officer from GCD and a deputy director of FCPA were appointed as deputy heads. The PMO was equipped with competent technical, administrative, and supporting staff necessary to ensure smooth implementation of the Project. Key PMO personnel were fully trained (3 courses) in ADB procedures relating to project administration, procurement, and disbursement. A total of 3,109 people have been employed to run Fangcheng Port.

22. A PMO for the highway component was set up separate within GCD. Senior GCD staff were assigned as the directors, and high-level managerial and technical staff were assigned to supporting PMOs. The PMOs are responsible for the whole process of project implementation. Over 750 people have been employed to run the Natan–Fangcheng Port highway, including the ADB-financed component.

23. The People's Bank of China also provided supervision and coordination to the Project, but under the institutional reform that took place in 1998, this function was transferred to the Ministry of Finance. The Ministry of Communications was responsible for the construction and training of the Project. All of the training programs had to be checked and approved by the ministry. The implementation arrangements were adequate and played a significant role in achieving the project targets (Appendix 7).

G. Conditions and Covenants

24. Overall, the loan covenants have been complied with. The only delayed compliance was in the construction of a wastewater treatment plant and the solid waste treatment facility, which should be provided by the Fangcheng Gang municipal government. They are still under construction. Details of compliance status are shown in Appendix 8.

H. Related Technical Assistance

25. The Project was complemented by the project preparatory TA for the Second Ports Development Project (footnote 2). The scope of the TA was (i) overall review of the port

subsector in the PRC, (ii) review of the scope and feasibility of the Project, and (iii) review of the environmental impacts of the proposed investments. The Project was also complemented by advisory TA for management and operational strategies for port authorities.[5] The TA significantly assisted the Government in establishing a framework for establishing a management and operational strategy, a container terminal operations plan, staff training, and a national conference on container operations and management strategies. All TA items were implemented with the assistance of ADB staff and a consultant team. The national conference was convened in January 1999 in Beijing. The project preparatory TA was completed in 1995, while the final report of the advisory TA was submitted in 1999.

I. Consultant Recruitment and Procurement

26. The feasibility study was completed satisfactorily by a domestic consultant with financing from the Government. The domestic consultant was retained to carry out detailed design and construction supervision of the port component. To ensure that procurement is conducted efficiently in accordance with ADB's *Guidelines for Procurement*, and to provide on-the job-training for the Executing Agency, a procurement adviser was proposed at appraisal to be recruited internationally for intermittent services totaling 4 person-months. The procurement advisor was not recruited because the Executing Agency and the tendering company were able to conduct the process of procurement according to ADB's standard procedures without assistance.

27. The loan for the Project also includes funding for executing agency staff to receive about 100 person-months of international training in port management and planning. The allocated training cost was $0.66 million. Forty-six person-months of training programs were implemented for the port component, at a total cost of $0.28 million. The returned trainees are retained in positions where their training is being utilized effectively.

28. Regarding the highway component, no international consultant service was included. Fifty-three person-months of international training were completed, at a total cost of $0.44 million. All of the trainees are now playing important roles in the management of the existing highways.

29. ADB approved advance action for the award of the contracts for the procurement of port and highway construction equipment and for the engagement of an individual consultant as procurement adviser in April 1995. Contracts for the materials and equipment were procured in accordance with ADB *Guidelines for Procurement.* Most of the contracts were procured through international competitive bidding or international shopping, depending on the contract amount. Direct purchase was used for the small packages not exceeding $50,000.

30. Contracts for civil works of the Project were procured publicly by the PMOs. All contracts for construction materials and equipment of the Project were financed by ADB, including 22 packages: 4 for construction materials and 18 for equipment. Procurement of 500 m^3 of timber proposed for the marine structure framework at appraisal did not occur, mainly because the contractor was able to create a better result using steel plates instead. Part of the equipment package was revised after discussion between the Executing Agency and ADB.

[5] ADB. 1995. *Technical Assistance to the People's Republic of China for the Management and Operational Strategies for Port Authorities*. Manila.

31. With the approval of ADB, $4 million was used for advanced procurement under the Project, but actual procurement for the material and equipment was made at $1.89 million for the highway component. Under ADB's no objection, the budget on material for the highway component was increased to $5.65 million from the planned $3.3 million at appraisal.

J. Performance of Consultants, Contractors, and Suppliers

32. Contracts for project equipment were performed generally smoothly. Most of the suppliers performed satisfactorily and have delivered goods upon contractual requirements. Only some suppliers delayed delivery or completion of installation.

33. The approach to disbursement of the loan was appropriate. There was a relatively long delay in processing (review and signing) of the withdrawal applications at GCD, and this led to occasional complaint from suppliers and delay in payment.

K. Performance of the Borrower and the Executing Agency

34. The Borrower has met all requirements of the Project. The Project was implemented following the arrangements envisaged at appraisal. At the early stage, executing agencies had shown some unfamiliarity with ADB's policy and procurement process, which delayed loan effectiveness and extended the implementation schedule. Following training to improve awareness, and due to ADB follow up, the Project progressed smoothly.

L. Performance of ADB

35. ADB's performance in completing the Project was satisfactory. During the loan implementation period of the Project, from preparation to completion and operation, ADB provided significant help and attention to the Project. In addition to the staff development program, ADB conducted training and seminars, which provided very good opportunities to advance the executing agency staff awareness of ADB procedures and policy, and removed several obstacles to implementation. The implementation arrangements were appropriate to the project needs, and the loan reallocation allowed additional works to enhance the Project's level of service. The number of ADB's review missions was adequate, had a good impact on the efficient implementation of the Project and greatly helped in the successful development of the Project. The executing agencies have complimented the role of ADB.

III. EVALUATION OF PERFORMANCE

A. Relevance

36. The Project was consistent with the priorities of ADB and the Government at the time of appraisal, and remains consistent with their current priorities. The Project benefits the poor community and therefore meets ADB's overarching goal of poverty reduction and its objective of developing integrated transport systems. As estimated at appraisal, implementation of the Project has met the following objectives: (i) provision of bulk cargo and container facilities for the port hinterland to improve operational efficiency of Fangcheng Port and increase its capacity from 6.98 million to 10.89 million tons; (ii) promotion of integrated transport planning and development of an intermodal transport system linking rail, road, and sea; (iii) easing the hinterland's traffic congestion and enabling the efficient movement of people and goods; (iv) the development of human resources to strengthen institutions responsible for port and highway construction, management, and operations; (v) development of the hinterland's

economy to create more employment opportunities and raise the living standards of the people; and (vi) support for implementation of the nation's strategy to develop its western parts and foster regional and international trade (particularly with Vietnam). The Project was assessed as highly relevant.

B. Efficacy in Achievement of Purpose

1. Port Component

37. The Project generally achieved the physical targets set at appraisal. It is expected to realize the wider development goal as envisaged. Construction of new terminals, together with the completion of a modern highway, have had a significant impact on the socioeconomic development of the relatively poor area.

38. In its first full operational year, the throughput bulk terminal (berth no. 9) reached 2.50 million tons, 0.5 million tons over its design capacity. In 2001, its throughput furthermore reached 3.03 million tons, with yearly occupancy of over 50%. A total of 151 ship calls were handled during 2000-2001, of which more than 120 were above 10,000 deadweight tons. The operation of berth no. 9 has also played a very important role in relieving the congestion of deep-water berths and shortage of stockyards at the port and has consolidated position of the port in handling large quantity bulk cargoes.

39. The operation of berth no.10 has pushed the container trade at Fangcheng Port into a new development stage and has provided hardware conditions for the expected and foreseen rapid development of the port's container trade. In 2001, the container traffic at Fangcheng Port reached 20,126 twenty-foot equivalent units (teu), 26.4% up from the previous year. Currently there are eight regular container vessels serving the port every week. Several international shipping lines have opened regular service at Fangcheng Port and established representative offices in provinces of the hinterland.

40. Full operation of the Project component has increased the Fangcheng Port's assurance to 90% for the vessels up to 30,000 deadweight tons to navigate the approach channel, reduced the average ship dwell time at the port from 3.2 days to 2.5 days, and reduced the average thousand-ton cargo handling time from 0.18 days to 0.13 days. These improvements have also greatly alleviated the congestion problem at the deep-water berths. The storage yards of the Project have added another benefit by providing additional storage capacity for nearly 1 million tons of cargo.

41. Fangcheng Port will be in a position to consolidate its strength for competition, as well as its geographical advantage, with respect to the cost efficiency of foreign trades, particularly to fulfill targets of the Government strategy for western region development, and for the country's accession to the World Trade Organization. These goals are also being strongly enhanced by the improved road connections with the hinterlands.

42. At present, the lack of sufficient railway wagons and services from Fangcheng to Nanning is one of the bottlenecks to speedy vacation of the cargo from the port premises, lowering the output efficiency and ability to handle additional cargo at the port. FCPA has tried to overcome the problem by purchasing over 40 road trailer trucks, but this will not be a long-term solution. With the cargo traffic at Fangcheng Port bound to increase rapidly as a consequence of development in the area, urgent action is required for better railway service to remove the bottlenecks and avoid any future hindrance to port performance.

43. During initial operations, no significant problems were found concerning the port facilities. The port's performance was acknowledged as of good quality and it recently succeeded in obtaining ISO-9002 certification.

2. Highway Component

44. The project highway has also met the following operational targets: (i) establishment of a coastal expressway company staffed with qualified professionals for administration and operations; (ii) semi-automatic toll collection system; (iii) performance indicators to monitor management processes and to strengthen human resources; (iv) promotion of routine maintenance programs; and (v) improved hazardous and emergency operations, with better road-side environmental control.

45. Three toll stations are set along the Qingzhou-Fangcheng Highway, including the ADB-financed component, and economic benefits have been achieved since they opened to traffic. The project highway has facilitated development, promoted economic growth, and created better transport links to the surrounding counties and cities, shortening the travel time and reducing the cost so as to attract more local and foreign investors. The whole Project, highway and port components, was assessed as highly efficacious.

C. Efficiency in Achievement of Outputs and Purpose

1. Financial Performance

46. The financial performance of FCPA is assessed in comparison with the appraisal projection (Appendix 9) and considered satisfactory.

47. Domestic cargo handling and ship calls significantly exceeded the appraisal forecast. Container cargo volume was constrained by the limited capacity in FCPA, but has been partly relieved since 2000 due to the completion of the project berths. The average revenue has declined because of intensified competition among the ports in the PRC. Continuous expansion of the port facilities—such as berths 11-16, which should be completed by 2005—will increase some operating costs. Increased financial expenses and losses from the noncore businesses will further reduce the return on port assets. Despite its strength of financial standing, FCPA is unlikely to meet the covenanted financial indicators for the next few years. Due to a large depreciation expense, the project expressway will not achieve its full cost recovery status until 2006, while the cash flow is sufficient to cover sound operation and maintenance as well as the debt service.

48. The financial internal rate of return (FIRR) is reevaluated using the same methodology as at appraisal (Appendix 10), but based on the actual costs and revenue during 1995-2001, and the updated separate assumptions for the port component (berths 9 and 10), the highway component (Qinfang Expressway), and the combined (port and highway) components.

49. The reevaluated FIRR for the port component is 7.8% against 5.9% of the weighted average cost of capital (WACC). Compared with 8.6% of the appraisal FIRR, 0.8% of decline accounts for the lowered tariffs and a delay in opening of the project berths. Exceeding its WACC, the port component is considered financially viable. The reevaluated FIRR for the Qinfang Expressway is estimated at 6.6%, which compares with 5.7% of the appraisal FIRR. The FIRR also exceeds 6.5% of the WACC. In spite of the lowered forecast traffic, the increase by 0.9% is mainly attributable to the actual tolls being much higher than the appraisal estimate

despite the increase of capital cost in the Borrower-financed section. Given the revised assumptions, the Qinfang Expressway has a satisfactory viability in financial terms.

50. The Project, in the combined components, provides 6.8% of FIRR compared with 6.9% at appraisal. The WACC for the combined components is estimated at 6.3%. In conclusion, the Project is considered to have achieved the expected return at appraisal with its satisfactory viability.

2. Economic Performance

51. Following the methodology used at appraisal, the economic costs and benefits of the with- and without-the-Project cases were reevaluated for the whole Project, as well as for the port and highway components separately (Appendix 11). For the Project as a whole, the economic internal rate of return (EIRR) was recalculated at 17.9%. In economic terms, the Project was well justified.

a. Port Component

52. The Project was reevaluated using the following assumptions, similar to those used at appraisal, as follows. Without the Project the existing port facilities will be used to their maximum capacity with an increasing degree of congestion at the berths and in the terminals. This would also result in decreased handling efficiency and long waiting time. Container traffic would have to be handled at nondedicated berths with lower handling efficiency. Ultimately, some traffic would be diverted to other ports, mainly Beihai and Zhanjiang, and transported overland at additional cost. With the Project the additional specialized berths will enable cargo to be handed more efficiently.

53. For the port component, the main sources of economic benefits are reduced ship-waiting and service time for ships and avoided overland transportation cost. Based on these benefits, the EIRR for the port component was reevaluated at 33.5%, compared with 21.1% estimated at appraisal. The much higher EIRR than that at appraisal was mainly due to decreased capital cost, which had been anticipated at appraisal to be disbursed more upfront and for a shorter period.

b. Highway Component

54. For the highway component, the reevaluation used the assumptions similar to those used at appraisal. Without the Project the existing road would be used until it reaches its capacity limit with an increasing degree of traffic congestion and mixture of fast and slow-moving vehicles. With the Project the new highway, with improved horizontal and vertical alignments and four lanes, will be used extensively for traffic to and from the port and for intercity travel due to lower vehicle operating cost and shorter travel time. The existing road will be mostly used to serve local traffic and by slow-moving vehicles such as tractors.

55. The main economic benefits of the highway component arise from reduced vehicle operating costs for vehicles using the new road and reduced congestion accruing to traffic that remains on the old road. Based on these benefits, the EIRR for the highway component was reevaluated at 14.7%, compared with 21.4% at appraisal. The lower EIRR was mainly due to an increased capital cost compared with the appraisal estimate and slower-than-expected traffic growth. However, a sensitivity analysis has indicated that the Project continues to be economically viable under the same scenarios during appraisal. The EIRR was calculated at

12.4%, close to the cut-off rate, under the most adverse scenario (10% cost increase and 10% benefit decrease). Careful monitoring of the traffic and project implementation is therefore recommended during project operation. The Project, in the combined components, was assessed as highly efficient.

D. Preliminary Assessment of Sustainability

1. Policy Reform

56. FCPA is managed under a business license. The license establishes FCPA as an independent legal identity and provides for autonomous management of the port, in line with the Government's decentralization policy initiated in 1994. This is in accordance with appraisal. In line with the TA recommendations (footnote 5), FCPA is now proposing to reform and commercialize its operations and management by founding a public limited company, through issuing publicly offered shares, to which all the port operational assets would be transferred.

57. FCPA has gained significant experience and resources through multilateral projects, financed by the World Bank in the 1990s, as well during the implementation of the current Project, and has undertaken several policy reform measures to reduce operational expenses, improve efficiency, and enhance revenues, such as: (i) cutting expenses by 8% in 2000 and another 5% in 2001; (ii) improving cargo turnaround time by removing bottlenecks at the port premises; (iii) introducing a quality assurance system, installing an advance computerized management system, and complying with ISO conditions; (iv) strengthening planning, construction, operation and maintenance institutions; (v) developing a thorough human resources program; and (vi) working toward the target of being fully self sufficient.

58. Along with the deepening of the market economy development and institutional reform, all the companies originally subordinated to GCD have now become commercialized and are completely separate from GCD's authority. The Guangxi Expressway Administration Bureau (GEAB) is now responsible for the operation, maintenance, and administration of the existing highways. The Coastal Section of GEAB is responsible for the project highway, and there are three local offices established in Qin-Nan, Qin-Bei, and Fang-Gang. The Guangxi Expressway Group Company was established within GEAB in 1997, and the corporatization of the whole GEAB is being undertaken step by step. All policy reform issues for the port and highway have been dealt with as anticipated at appraisal.

2. Risks

59. As formulated at appraisal, the Project does not face any risks. FCPA and GEAB have adequate technical resources, institutional capacity, revenue growth, and profit, and there is no significant debt service obligation. Rapid growth in port and highway traffic, and development of road and railway networks, together with the Government's socioeconomic strategy for the hinterlands, will ensure an adequate demand for the facilities provided under the Project. There is a good potential for improvement of the port product sales and operations. It is chaired by the local party secretary and gained Central Government support. The project highway forms an integral part of the GZAR and western road network strategy. Overall, the Project was assessed as most likely sustainable.

E. Environmental, Sociocultural, and Other Impacts

1. Port Component

a. Environmental Impacts

60. The environmental monitoring as required in the Environmental Impact Assessment of the Project is being implemented by FCPA. The regular monitoring of the seawater quality and air quality is carried out using the equipment procured under the Project. Fangcheng Municipality has started implementing the construction of a municipal wastewater treatment plant to which the port will be eventually linked. FCPA has installed water sprinklers in the bulk cargo-handling areas and also planted trees in the port to reduce the visual impacts of bulk cargo operations. The monitoring results obtained conform to the required standards.

61. According to the loan covenants, Fangcheng municipal government should provide a wastewater treatment plan and solid waste disposal facilities prior to project completion, to be used for the treatment wastewater and solid waste from both the city and the port. However, these facilities are still under construction. The reason for delay is that FCPA has no authority to require the municipal government to speed up the process. The municipal government had to deal with several complex administrative and protocol issues. With ADB follow up with FCPA and GCD, the construction of these facilities is now progressing satisfactorily. To date, FCPA has managed to undertake all necessary measures to tackle any environmental problem. According to the latest port assessment, there are no major environmental impacts at present. The environmental protection process of the Project was carried out with compliance to the requirements of the Environmental Impact Assessment Report, which had been approved by the State Environmental Protection Administration. Four wastewater treatment stations were built under the Project for the treatment of wastewater from coal and or storage areas, life wastewater, container washing wastewater, and the wastewater from machinery repairing. Collection and transportation of solid wastes from the project area are carried out by using fixed garbage boxes and garbage trucks arranged within the whole port. The environmental protection equipment procured under the Project has enhanced the monitoring capability of the Executing Agency. Additionally, over 10,000 m^2 of the project area have been planted with trees and grass. There are no significant ecological impacts, especially in terms of coastal resources and mangroves, as estimated at appraisal. The environmental protection of the Project has been carried out satisfactorily. In February 2002, the Project's environmental protection facilities were inspected and accepted by the General Monitoring Station of the State Environmental Protection Administration.

b. Occupational Health and Safety

62. For the sake of employees' health and safety in the port operational areas, all necessary safety facilities have been installed in compliance with the relevant Government regulations. Buildings were constructed strictly with safety communication space intervals. Roads in the port area are wide. Obvious traffic signs and administrative facilities are installed at railway crossings and road bends. Reliability and noise abatement measures were among the main considerations during the selection of the equipment. Wind speed, alarming devices, rail clamps, anti-wind anchoring devices, anti-slip pits and anti-collision devices have been installed for the tall and large equipment (including quayside container cranes and rubber tired gantry cranes) to ensure their safety during operation and in severe weather.

63. Prescriptions concerning daylighting, heating, and ventilation for buildings were complied with. Anti-thunder earthing facilities were installed for substations, boiler houses, and rail-mounted equipment. The approach channel and harbor basin of the port are suitable for vessel navigation and equipped with reasonable and safe navigation guiding and aiding facilities. There are toilet rooms in workshops and in places with mass buildings. Nursing rooms, health care rooms, and rest rooms are located in building areas where staff are working. There are also facilities for shower and dining for staff. Because the Project is located in an area susceptible to earthquakes up to level VI, all the Project buildings have been designed to resist the earthquake at this scale.

64. The Project's occupational health and safety facilities have been inspected and accepted by the Safe Operation Supervision Bureau of the State Economic and Trade Commission.

2. Highway Component

a. Environmental Impacts

65. The project highway passes through loose and poor soil. These conditions are also associated with heavy rains during the rainy season every year, resulting in the serious soil erosion and collapse of the side-slope of the highway. The general side protection and turf cannot function properly for long periods of time. GCD has allocated more budget to continuously monitor and study the side-slope conditions, greening, and environmental protection.

66. Local turf and liane (a woody vine especially of the tropical rain forests that root in the ground) have been bred for the protection, and the drainage facilities have been built. So far, the soil erosion and side-slope collapse have been maintained within reasonable limits and both sides of the highway are in good condition. To avoid congestion and other urban problems, the final 5 km of the highway alignment follows the coastal line and encloses an exiting bay area of about 2 km^2. The embayment is part of an ongoing reclamation project for the development of the commercial area of Fangcheng. The new shoreline created by the embayment has no significant affect on sediment movement in the area, and there is no significant encroachment onto mangrove or fishery areas. The highway has been designed to avoid mangrove forest areas, and mangrove has been replanted on the coastal margin where site conditions are favorable.

b. Road Safety

67. GCD has established a dedicated team to deal with road safety audit and emergencies of the highway (in particular road design and operations issues). The Public Security Bureau has also established a section to deal with the traffic enforcement. The section's activities include all road accidents along the highway. The lack of resources of this section is obvious.

68. There has been a significant increase lately in the number of accidents on the project highway. According to official figures, there were 3 fatalities, 2 injuries, and 26 accidents in 2001, compared with nil, 2, and 20, respectively, in 2000. Unless action is taken, these numbers are likely to escalate further in the coming years as fast growth increases traffic in the area.

c. Land Acquisition and Resettlement

69. For the port component, the required land area of about 0.3 km^2 was within the jurisdiction of the land area allocated to FCPA by government, and no further acquisition was needed. For the construction of the ADB-financed 20 km section of the highway, the land needed for the right-of-way totaled about 1.4 km^2 at appraisal. By September 1995, 47 households affected by this component had been resettled by the Government. The living standards of the resettled families have been improved significantly. All land acquisition and resettlement reports were produced and approved on time. The institutional development, environmental, and other impacts of the Project, port and highway components, was assessed as sustainable.

IV. OVERALL ASSESMENT AND RECOMMENDATIONS

A. Overall Assessment

70. Fangcheng Port is one of the 19 hubs of PRC ports and is defined as class 1. It is the principal port of the GZAR, handling over 70% of its shipping cargo traffic; serves the landlocked provinces of southwestern PRC; and is the focal point to connect southwestern PRC with southeast Asia, particularly Vietnam. It also has a good natural location with deepwater and shelter, and now has 27 berths. With the current sustained development, Fangcheng Port has extended its business scale and output capacity, including loading and unloading, storage, passenger transport, and handling of variety of products. Road connections have been radically improved following the completion of several projects including the project highway. The port is one of 13 national port enterprises owning railway self operation. It enjoys good conditions for sustainable development and a very favorable site for continuous extension. There are six planned berths, 11-16, to be fully completed by 2005. In 2002, FCPA has already completed all marine structure and dredging of the planned berths 11 and 12 using local finance. Petroleum berth no. 0 and berth no. 1 also have been completed, together with nine small berths in the northern part of the port. Work is now in progress to further develop the railway network to link the planned berths, using local finance. These planned facilities will strengthen the port's operational capacity and meet future demand for services. They will provide significant relief to the Project's terminals and prevent any future congestion.

71. The port exercises good quality control, has a large open storage area, modern equipment, and a good reputation among its customers.

72. The future of the port, its city, and the region, which are all growing rapidly, are closely linked. A large proportion of the downtown area immediately adjacent to the port is port land, on which the port residential area, school, hospital, hotel, and offices are situated, and these lands are a major asset of substantial value. The population of the surrounding port districts increased from 770,000 in 2000 to over 780,000 in 2001, while passengers visiting the districts for work or leisure increased by 200,000 in 2001 compared with the previous year. More than seven joint ventures have also been established with domestic and foreign partners.

73. Overall the Project is rated highly successful. The Project has achieved its immediate objective of improving the provincial and regional socioeconomic development. From the preparatory phase to the completion of construction, the Project has obtained extensive guidance and assistance from the higher authorities and concerned departments, and from ADB.

B. Lessons Learned

74. The following lessons were learned in the course of the Project:

(i) The Project suffered some delays due to inability of some suppliers to deliver timely services. On hindsight, a prequalification process to disqualify incompetent contractors could have been used.

(ii) The delay in the port component at the early stage of the Project was due to the unfamiliarity of the executing agency with ADB requirements. Advance awareness of ADB requirements and policy on the part of executing agency staff is, therefore, essential.

(iii) ADB involvement to speed up loan effectiveness and monitor project progress is an integral part of ensuring successful operations.

(iv) The port construction materials should not be procured in one large package. This procurement could not meet the demand for change, arising from alteration or optimizations of design and construction schemes of civil works. This also would lead to allocation of further expenses, unnecessary storage areas, and possible rust and deterioration of some of the equipment, which is needed at later stage. Construction materials should be procured under small batch-by-batch procedures and as required.

C. Recommendations

1. Project-Related

75. The following recommendations were discussed in the course of the project completion review with both the executing agency and the Government:

(i) While it is essential to concentrate on the core business, FCPA should assess all noncore and nonprofit businesses and dispose of the unnecessary services by closure or sale for best benefit. Licenses could be issued subject to conditions to attract private investors, e.g, customs clearance and ships' agency.

(ii) A value for the land allocated to the port should be agreed upon and land values should be reviewed at regular intervals, to enhance the assets of FCPA.

(iii) An annual plan should be produced by FCPA to assess and ensure smooth port machinery replacement and adoption of high-standard maintenance systems.

(iv) FCPA should conduct a monitoring program, create performance indicators, and develop a business plan and training programs to optimize the use of resources.

(v) FCPA should create an efficient marketing department for the promotion of port services, and develop a customer services strategy. Relevant front line managers and staff should be trained in the principles of customer service requirements.

76. Other recommendations concern project reporting. FCPA submitted annually the audited project accounts and the audited financial statements of FCPA. GCD submitted annually the project accounts of the ADB-financed 20 km section out of the Qinfang Expressway. Such project accounts, having duly been reconciled and substantiated with the ADB records, are considered no longer necessary. On the other hand, the audited financial statements of FCPA need to be submitted at least for the next 5 years to monitor the covenanted financial indicators as well as the overall financial status of FCPA. GCD should submit the proforma financial statements of Qinfang Expressway on unaudited basis for at least next 5 years.

77. The covenanted level of annual return on average net fixed assets should be modified from 7% to 5%, which is more reasonable for the actual performance of FCPA.

78. This Project represents a unique example of ADB support for an integrated transport system and efficient transport planning. It is the second completed port project financed by ADB since 1991. The Project included various transport modes: port, road, and railway (financed by the Government). It also dealt with socioeconomic growth and poverty reduction and it established significant links at several levels: PRC western region, Asia (through Vietnam), and international. It is one of three port projects financed by ADB during the last 14 years in the PRC, and is in line with ADB's current policy of encouraging intermodal transport. Because of this Project's satisfactory results, ADB should consider addressing the intermodal aspects under future projects.

2. For the Project Executing Agencies and the Government

79. Project Completion Mission observations and lessons learned throughout project implementation yielded the following recommendations for the executing agencies and Guangxi government.

(i) The lack of railway wagons and services is now one of the bottlenecks to speedy vacation of the cargo from the port premises, impacting the output efficiency and attracting additional cargo at the port. Enhancement of the railway services is essential to avoid any future impact on the port efficiency and regional government strategy.

(ii) Container yards have been designed against average overall container dwell times of about 10 days. The reported dwell times for containers must be maintained if the terminal is to work satisfactorily.

(iii) Allowance should be made for the provision of more reefer points in the container stacking area. Given the tropical climate, the demand for reefer facilities is likely to be significant.

(iv) Fangcheng Port is located in an area of coast that is subject to attack by typhoons, and therefore provision should be made in the stack yard to tie down empty containers.

(v) A separate area should be made available for the storage of containers carrying hazardous cargoes.

(vi) Development of a traffic management plan is essential to consider the possible impact of queuing on the road network in the vicinity of the port.

(vii) Fangcheng City must review its master plan and consider the construction of a new road to divert traffic leaving the port outside the City with a connection to the highway.

(viii) Continuous monitoring of the power supply, water supply, fire fighting, and drainage and sewerage systems of various port facilities is essential to meet contingency requirements.

(ix) Fendering of the berth should be inspected and improved regularly.

(x) Road safety is now a major concern on the highway. With the anticipated rapid traffic growth, the increase of heavy vehicles, and current high speed driving, it is obvious that the number of fatalities and accidents will be further increased significantly. GZAR government should develop an integrated interdepartmental strategy to improve road safety and enhance efficiency of the road transport system.

(xi) There are no vehicle weigh stations on motion system along the highway to monitor axle load and overloaded vehicles. The current increase in the number of heavy vehicles in the project area necessitates immediate action to protect the project assets.

(xii) While the ongoing monitoring of the environmental quality at the port and highway is satisfactory at this stage, the GZAR government should speed the construction of a wastewater treatment plant and solid waste disposal facilities as soon as possible; FCPA and GCD should continually monitor the project facilities.

(xiii) FCPA and GCD should provide ADB with progress reports regarding application of these recommendations by 30 July 2003.

CHRONOLOGY OF MAJOR EVENTS

13-27 Jan 1995	Fact-Finding Mission fielded
6 Apr 1995	Management Review Meeting
6 Apr 1995	Advance action for the procurement of port and highway construction materials and highway construction equipment, and for the engagement of consultant was approved. Retroactive financing of about $4.0 million was approved in principle for these activities.
3 Jul 1995	Circulation of Summary of Environmental Impact Assessment to the Board of Directors
21–31Aug 1995	Appraisal Mission fielded
22 Sep 1995	Staff Review Committee Meeting
30 Oct – 3 Nov 1995	Loan negotiations held
5 Dec 1995	Award of contract for the concrete slipform paver
3 Jan 1996	Award of contract for the procurement of stone crushing plant, through international shopping, under advance action
18 Jan 1996	Asian Development Bank approved a loan of $52.0 million for Fangcheng Port Project
5-9 Feb 1996	Inception Mission fielded
26 Feb 1996	Award of contracts for the procurement of cement and steel through international shopping, under advance action
22 Apr 1996	Approved request for minor changes in the number of road construction equipment without changing the total cost for the said equipment
11 Sep 1996	Project feasibility study approved by the State Planning Commission
3-5 Dec 1996	Review Mission 1 fielded
15 Jan 1997	Loan and Project Agreement were signed
28 Apr 1997	Approved extension of loan effectiveness from 15 April to 15 July 1997
6 May 1997	Receipt of Report of Resettlement Monitoring
20 May 1997	Approved procurement of testing instrument and equipment

20 Jun 1997	Loan declared effective
5 Aug 1997	Approved procurement of cement and steel for highway component
3 Sep 1997	Award of contract for the procurement of cement and steel by international shopping
29 Oct - 1 Nov 1997	Review Mission 2 fielded
18 Dec 1997	Approved procurement of Package 3: construction equipment
14 Jan 1998	Approved reallocation of loan proceeds regarding procurement of additional construction materials - cement and steel
26 Jan 1998	Award of contract for Package 2 – boring machine and Package 4 – roller
13 Feb 1998	Award of contract for Package 5: excavator, grader, and bulldozer
26 Feb 1998	Approval of Package 1: dump trucks & semi-trailer tractor trucks.
18-27 Jul 1998	Mid term Review Mission fielded
12 Jan 1998	Approved reallocation of loan proceeds to procure additional construction materials (cement and steel)
21 Sep 1998	Approved request to separate bidding of quayside container gantry cranes and Rubber Tired Gantry Cranes for package because only few suppliers manufactures both equipment
Nov 1998	Highway component opened to traffic
20-24 Apr 1999	Review Mission 4 fielded
25 Aug 1999	Award of contract for the procurement of quayside gantry crane (Package 1-A)
23 Sep 1999	Award of contract for the procurement of reach stackers, tractors units, semi-trailers, trimming bulldozers, wheel loaders, bulldozers
17 Nov 1999	Award of contract for the procurement for portal crane (16 ton)
4 Feb 2000	Award of contract for the procurement of forklift trucks (16 ton), empty container stackers (7), forklift trucks (2.5 ton)
18 Apr 2000	Award of contract for the procurement of rail weighbridge & electronic truck scale, computer management system, container washing equipment & sockets for refrigerated containers

3 May 2000	Award of contract for the procurement of environment protection monitoring
23-27 May 2000	Review Mission 5 fielded
24 Oct 2000	Award of contract for the procurement of 110-kilovolt transformer substation, 10-kilovolt power substations and cable high pole lights, and 110-kilovolt line engineering
30 Mar 2001	Cancellation of loan savings of $8.5 million
18-24 Apr 2001	Review Mission 6 fielded
4 Jul 2001	Award of contract for the procurement of waste oil collection equipment and maintenance truck
15 Oct 2001	Cancellation of undisbursed loan balance of $3,229,096.48 and the loan account closed
14-24 May 2002	Project Completion Review mission fielded

PROJECT FRAMEWORK [1]

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Goal			
1. To promote economic growth in a poor area by removing transport constraints through increasing port capacity, improving operations, and creating integrated transport linkages	Economic growth for impacted area during the project life Tonnage of provincial and international trade Increase in domestic and foreign investments in the project area	Provincial statistical yearbooks, and annual and provincial reporting Before and after project completion conditions	Continued rapid economic growth in the People's Republic of China, particularly in the western region Adequate funding for port, rail, and road improvements
2. To reduce poverty by improving living standards and creating employment in the project area	Creation of new jobs, and decline in the number of poor people in the project area	Number of employed people, trends of privately owned businesses, and growth in the project area	Complimentary investment in infrastructure development and social welfare programs
Purpose			
to improve port infrastructure through provision of increased capability for efficient domestic and international trade and better movement of people and goods	Serious traffic congestion on the existing port facilities removed through construction of new terminals	Port traffic growth, and time saving	Demonstrated implementation capacity of Guangxi Communications Department and Fangcheng Port Authority
	Creation of efficient road system to enhance port access to surrounding activity centers	Traffic count and travel time saving for the new highway and other roads corridor	Demonstrated implementation capacity of executing agencies
	Safer roads in the project areas through better traffic management	Decline in the number of accidents and fatalities	Better enforcement, reporting system, and coordination of relevant agencies
	Increased mobility of the poor communities	Official statistics	
To improve access to surrounding cities, towns, and other activity centers	Increased ownership of motorized vehicles to facilitate the movement of people and goods	Monitoring of vehicular traffic growth	Adequate government funding and programs
	More reliable system,	Monitoring of system	

[1] The Project Completion Mission created this Project Framework as there was no framework prepared at appraisal.

	reduced delivery and travel time, and lower transport cost	operations, and administration	
To catalyze restructuring of road and port agencies as corporations, to improve management, and create conditions to attract private sector financing	Inadequate management and operational systems modernized through new equipment, better resources, and staff development	Evaluate operational programs and activities against performance indicators	Commitment to adopt best practice and provide competitive services
Outputs			
Port component	Construction of two terminals	Terminals completed Traffic forecast Operational efficiency	Facilities be kept in good condition Continuous staff development and adoption of best practice techniques Strategic planning to meet demand, and improved services
	Provide modern equipment	All equipment successfully procured and fully used	
Highway component	Construction of modern highway	20 kilometers completed Modern technology in use	Government continues to provide adequate funding. Continuous training needs to be provided to operational personnel
Consulting services	Enhance efficiency of executing agencies	Timely fielding of consultants Service provided	
Human resources	International and in-country training programs	Staff development programs completed	
Policy reforms	Strengthen institutional planning, construction, and operation and maintenance capabilities	Reform implemented	
Activities/Inputs			
Port component Highway component	Implement components of the project scope	Project implemented, and objectives met	Main text, paras. 2, 16-19 and 25-30.
	Meet implementation schedule deadlines		

SCOPE OF WORKS PLANNED AT APPRAISAL VS. ACTUAL

Scope of Works Planned at Appraisal	Actual
1. Civil Works	
(i)Construction of a dedicated container terminal and multipurpose bulk cargo terminal, each having one berth (no 9 and 10) with combined length of 486 meters (m) and depth of 11.65 m	Construction of a dedicated container berth (No. 10) at 25,000 tons (t) with a design throughput capacity of 80,000 twenty-foot equivalent units (equivalent weight of 640,000 t) and a multipurpose bulk cargo berth (No. 9) at 30,000 t with a design throughput capacity of 2,000,000 t, having a combined length of 498 m with a quay cope level of +6 meters and an alongside depth of 11.65 m
(ii) Back-up operational and open storage areas totaling 250, 000 m^2	Formation of a back-up land with a depth of 650 m and construction of the operations and storage area totaling about 310,000 m^2.
(iii) Dredging of the port approach channel to a depth of 8.9 m and width of 120 m	Dredging of the vessel turning basin to a depth of 9.5 m and the port approach channel Niutou section to a depth of 9.5 m and width of 100 m.
(iv) Expansion of the port rail marshalling area and sidings with total length of 8.4 kilometers (km)	Expansion of the port rail marshalling area and sidings with a total length of 8.5 km
(v) Construction of about 48,000 m^2 of related port buildings and ancillary services	1. Construction of all related port buildings, including warehouses 2. Construction of other ancillary services including power supply, illumination, communications, firefighting, water supply, and drainage
(vi) Procurement of container handling equipment including two 40 t gantry cranes, four yard cranes, fork lift trucks, tractors and trailer units, various container servicing equipment including a computer control system, bulk cargo-handling equipment comprising 16-ton quayside cranes, a bucket unloader, two stackers, a belt conveyor, bulldozers and wheel-loaders, a 3,200 horsepower tugboat, a power substation and environmental protection equipment for oil spill clean-up	1. Equipment 2. The container terminal equipment including gantry cranes, rubber tired gantry cranes (RTGs), reach stackers, forklift trucks, tractors, trailer units, and container computer management system 3. The multipurpose bulk terminal equipment including portal cranes, bucket unloaders, stackers, belt conveyors, wheel loaders, trimming dozers, and bulldozers. 4. Power supply equipment

	5. Other equipment including environmental protection and maintenance equipment
(vii) Procurement of port construction materials comprising about 3,500 t of steel, 16,000 t of cement, and 500 m^3 of timber	All completed
2. Highway	
(i) Construction of a 20 km section of the 45 km long, 24.5 m wide four-lane, dual carriageway linking Fangcheng Port with the Naning to Beihai Expressway	Completed
(ii) Procurement of highway component equipment, including bulldozers, excavators, graders, a drilling machine, trucks and loaders; and highway operations equipment including pavement maintenance machine, and toll and communications and monitoring equipment	All completed
(iii) Procurement of highway construction materials comprising about 32, 000 t of cement and 5,000 t of steel	All completed
3. Consulting services	
Consulting services for details design, consulting supervision, and training	1. Services for detailed design and construction supervision were provided. 2. Foreign procurement adviser was not recruited. Domestic firm was used.
4. Staff Development	
Upgrading of technical skill of personnel from the executing agencies to promote technology transfer and human resources development	Training programs of personnel from the executing agencies were completed on time, both international and in-country.

FINANCING PLAN

Table A4.1: Financing Appraisal vs. Actual
($ million equivalent)

Source	At Appraisal			Actual		
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total
A. Port component						
Guangxi Communications Department	0.0	9.5	9.5	0.00	6.76	6.76
Fangcheng Municipal Government	0.0	9.0	9.0	0.00	2.33	2.33
State Development Bank	7.0	23.0	30.0	0.00	16.04	16.04
Fangcheng Port Authority	0.0	8.5	8.5	0.00	5.92	5.92
Asian Development Bank	32.0	0.0	32.0	19.95	0.00	19.95
Subtotal	**39.0**	**50.0**	**89.0**	**19.95**	**31.05**	**51.00**
B. Highway Component						
Ministry of Communications	0.0	8.0	8.0	0.00	8.00	8.00
Guangxi Communications Department	3.0	15.0	18.0	3.00	15.20	18.20
Asian Development Bank	20.0	0.0	20.0	20.32	0.00	20.32
Subtotal	**23.0**	**23.0**	**46.0**	**23.32**	**23.20**	**46.52**
Total	**62.0**	**73.0**	**135.0**	**43.27**	**54.25**	**97.52**

Table A4.2 Financing Plan by Component
($ million)

Item	Appraisal Estimate			Actual		
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total
A. Port Component						
1. Implementation Costs						
a. Borrower financed	6.3	45.5	51.8	0.00	27.20	27.20
b. ADB-financed	29.3	0.0	29.3	18.82	0.00	18.82
Subtotal A1	**35.6**	**45.5**	**81.1**	**18.82**	**27.20**	**46.02**
2. IDC Costs						
a. Borrower financed	0.7	4.5	5.2	0.00	3.85	3.85
b. ADB-financed	2.7	0.0	2.7	1.13	0.00	1.13
Subtotal A2	**3.4**	**4.5**	**7.9**	**1.13**	**3.85**	**4.98**
Subtotal A	**39.0**	**50.0**	**89.0**	**19.95**	**31.05**	**51.00**
B. Highway Component						
1. Implementation Costs						
a. Borrower financed	3.0	23.0	26.0	3.00	23.20	26.20
b. ADB-financed	18.7	0.0	18.7	17.25	0.00	17.25
Subtotal B1	**21.7**	**23.0**	**44.7**	**20.25**	**23.20**	**43.45**
2. IDC Costs						
a. Borrower financed	0.0	0.0	0.0	0.00	0.00	0.00
b. ADB-financed	1.3	0.0	1.3	3.07	0.00	3.07
Subtotal B2	**1.3**	**0.0**	**1.3**	**3.07**	**0.00**	**3.07**
Subtotal B	**23.0**	**23.0**	**46.0**	**23.32**	**23.20**	**46.52**
Total	**62.0**	**73.0**	**135.0**	**43.27**	**54.25**	**97.52**

ADB = Asian Development Bank, IDC = interest during construction

PROCUREMENT DETAILS

Table A5.1: List of Civil Works Contract Packages

Contract No.	Name of Contractor	Item	Mode of Procure-ment	Contract Date	Country of Origin of the Contractor	Original Contract Amount $	Final Payment ($ equivalent)
Port Component							
Construction Materials							
1	China Communications I/E Corp.	cement	IS	21/08/97	PRC	396,300.00	396,300.00
2	China Communications I/E Corp.	cement	IS	21/08/97	PRC	232,800.00	232,800.00
3	China Communications I/E Corp.	cement	IS	21/08/97	PRC	388,000.00	388,000.00
4	Wuhan Intl Eco. & Trading Co.	Steel Bars	ICB	29/12/97	PRC	771,743.00	771,743.00
	Subtotal					**1,788,843.00**	**1,788,843.00**
Highway Component							
Construction Materials							
1	Guangxi Machinery I/E Corp.	12 mm Rolled Steel Bar	LTD/TDR	08/05/98	PRC	897,000.00	897,000.00
2	China Communications I/E Corp	38,410 Mt - Cement	LTD/TDR	07/05/98	PRC	1,293,158.90	1,293,159.00
3	Guangxi Machinery I/E Corp.	Rolled Steel Bars	ICB	18/08/97	PRC	1,407,324.00	1,407,324.00
4	Guangxi Machinery I/E Corp.	425 & 525 Cement	ICB	18/08/97	PRC	1,074,449.60	1,074,449.60
5	Modern Intl Plant & Machinerty Ltd	Rolled Steel Bars	IS	26/02/96	PRC	502,500.00	502,500.00
6	Modern Intl Plant & Machinerty Ltd	Rotary Kiln Cement	IS	26/02/96	PRC	501,600.00	501,600.00
	Subtotal					**5,676,032.50**	**5,676,032.60**
	Total (a) + (b)					**7,464,875.50**	**7,464,875.60**

ICB = International Competitive Bidding, PRC = People's Republic of China, IS = International Shopping, LTD/TDR = Limited Tendering.

Table A5.2: Equipment Packages for Port Component

Contract No.	Contents	Mode of Procure-ment	Qty	Contract Date	Currency	Contract Amount	Final Payment (ADB's portion) ($ equivalent)	
1	Quayside Gantry Crane (40.5 t)	ICB	2	3 Sep 99	$	5,648,900.00	5,648,000.00	
2	Rubber Type Gantry Crane	ICB	2	23 Aug 99	$	1,556,102.00	1,556,102.00	
3	Bucket Unloader, Stacker (500 t/hr),	ICB	5	23 Aug 99	$	1,276,420.00	1,114,171.20	
4	Reachstackers/Forklift Trucks (42 t)	ICB	2	27 Nov 98	€	613,700.00	573,055.00	
					$	35,000.00	35,000.00	
5	Forklift Trucks (16t), Empty Container Stacker (7 t) Forklift Trucks (5t), Forklift Trucks (2.5t)	ICB	1,1,8	13 Apr 00	$	423,800.00	-	a
6	Tractor Units, Semi-Trailers (40t)	ICB	7,20	26 Oct 99	SKr	4,026,652.00	391,123.00	
					$	140,320.00	140,320.00	
7	Portal Cranes (16t)	ICB	6	30 Nov 99		3,102,540.00	3,102,540.00	
8	Trimming Bulldozers, Wheel Loaders, Bulldozer	ICB	8,6,2	22 Oct 99	¥	93,608,000.00	863,952.00	
						989,000.00	989,000.00	
9	Computer System	IS	1	21 Jan 00	$	411,272.00	411,272.00	
10	Maintenance Trucks	DP	1	12 Jun 01	$	45,238.00	45,238.00	
11	Waste Oil Collection Equipment	DP	1	22 Jun 01	$	23,974.00	23,974.00	
12	Weighbridges (60t)	IS	2	12 Jan 00	$	53,030.00	47,727.00	
13	Reefer Sockets	IS	96	12 Jan 00	CNY	240,072.00	29,004.15	
14	Container Washing/Drying Equipment	IS	1	13 Jan 00	$	8,500.00	8,500.00	
15	Power Substation (10 kv & cable)	ICB	1	10 Oct 00	$	752,769.58	752,769.58	
16	110kv Transformer	ICB	1	10 Oct 00	$	596,241.16	596,241.16	
17	Environmental Monitoring Equipment	IS	1	13 Jan 00	$	509,315.00	155,100.00	b
18	110-kv Line Engineering	ICB	1	10 Oct 00	$	267,850.00	267,849.50	
	Subtotal						**16,750,938.59**	

ICB = International Competitive Bidding, IS = International Shopping, DP = Direct Purchase

t = ton, kv = kilovolt , t/th = ton per hour

[a] The procurement was canceled because the supplier was unable to deliver the goods.

[b] The procurement was partially canceled because the supplier was unable some of the goods.

Table A5.3: Equipment Packages for Highway Component

Contract No.	Contents	Mode of Procure-ment	Qty	Contract Date	Currency	Contract Amount	Final Payment (ADB's portion) ($ equivalent)
1	Spreader	IS	1	15 Dec 95	$	468,500.00	468,500.00
2	Stone Crusher	IS	1	8 Jan 96	$	417,000.00	417,000.00
3	Testing Equipment	IS	1	28 May 97	$	235,773.00	235,773.00
4	Spare Parts for Testing Equipment	IS			$	61,765.00	61,765.00
5	Maintenance Equipment	ICB	5	6 Mar 98	$	1,173,094.00	1,173,094.00
6	Vibratory Rollers	ICB	11	11 Feb 98	€ (DM)	1,960,200.00	1,117,121.00
7	Bulldozer (4), Excavator (5), Grader (7)	ICB	16	18 Mar 98	¥	359,674,600.00	2,567,455.00
8	Dumper Trucks & Semi-Trailer trucks	ICB	38,5	18 Mar 98	¥	283,398,474.00	2,073,660.00
9	Driller	ICB	1	12 Feb 98	€ (DM)	1,183,000.00	665,500.00
					¥	40,000,000.00	283,212.00
10	Optical Transmission Equipment & etc.	DP		6 Apr 98	$	1,080,430.00	1,080,430.00
11	Optical Cables, Emergency Telephones	DP		3 Dec 97	$	488,533.00	488,533.00
12	Piping Projects for Communications System	DP		26 Aug 99	$	502,627.47	502,627.00
	Subtotal						**11,134,670.00**
	Total						**27,885,608.59**

Notes: ICB - International Competitive Bidding, IS - International Shopping, DP - Direct Purchase

IMPLEMENTATION SCHEDULE

Table A6.1 Highway Component

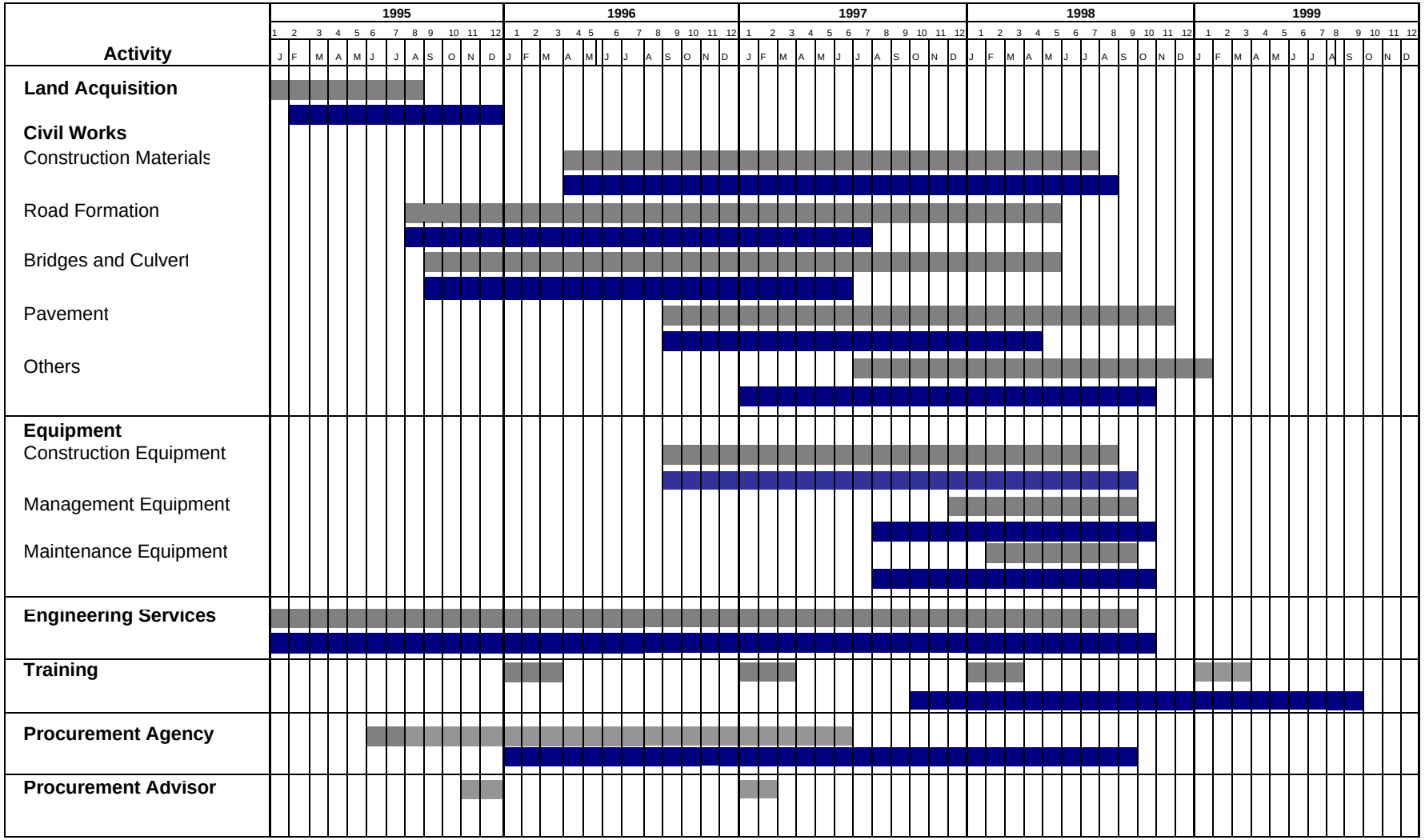
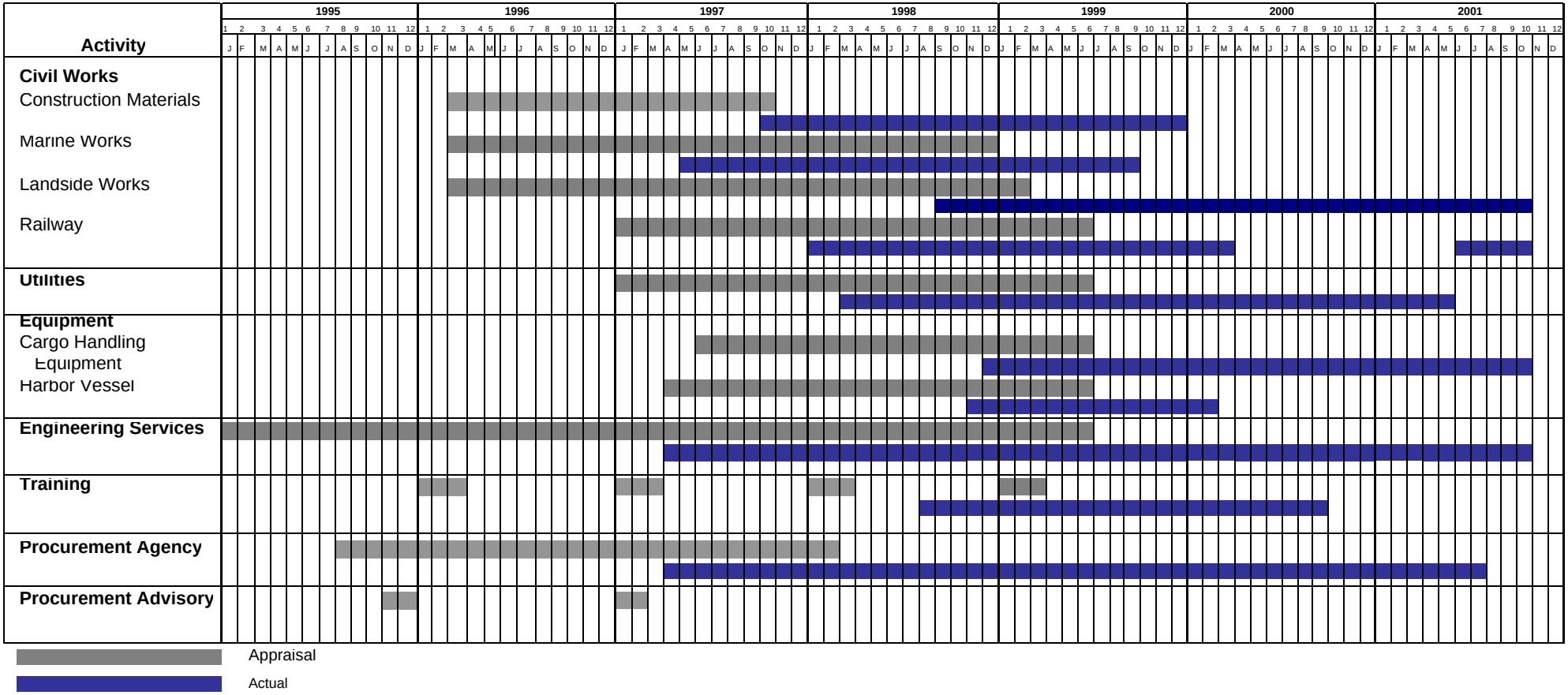


Table A6.2: Port Component



ORGANIZATION CHARTS

Figure A7.1: Project Implementation Arrangements

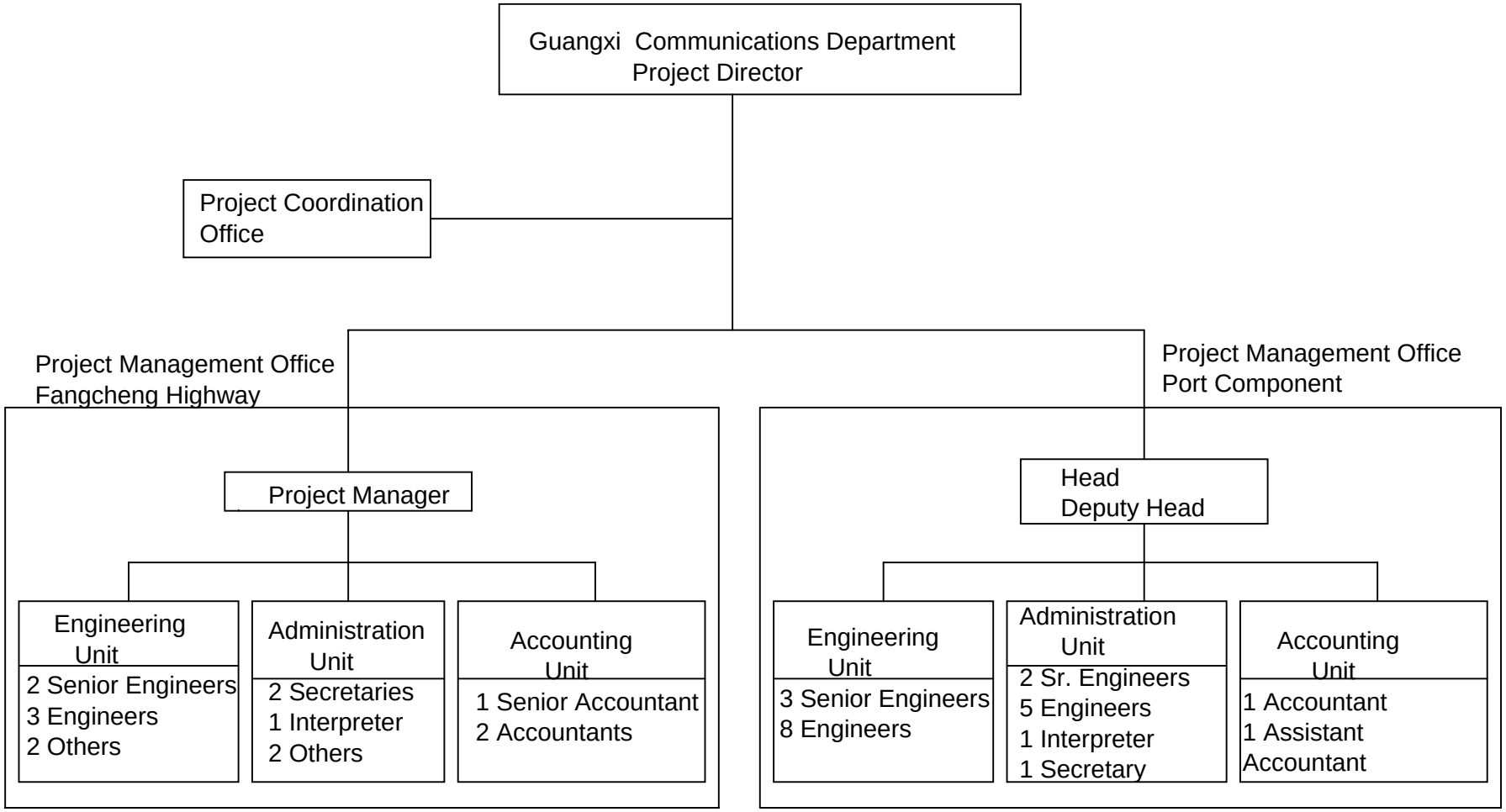


Figure A7.2 Guangxi Communications Department

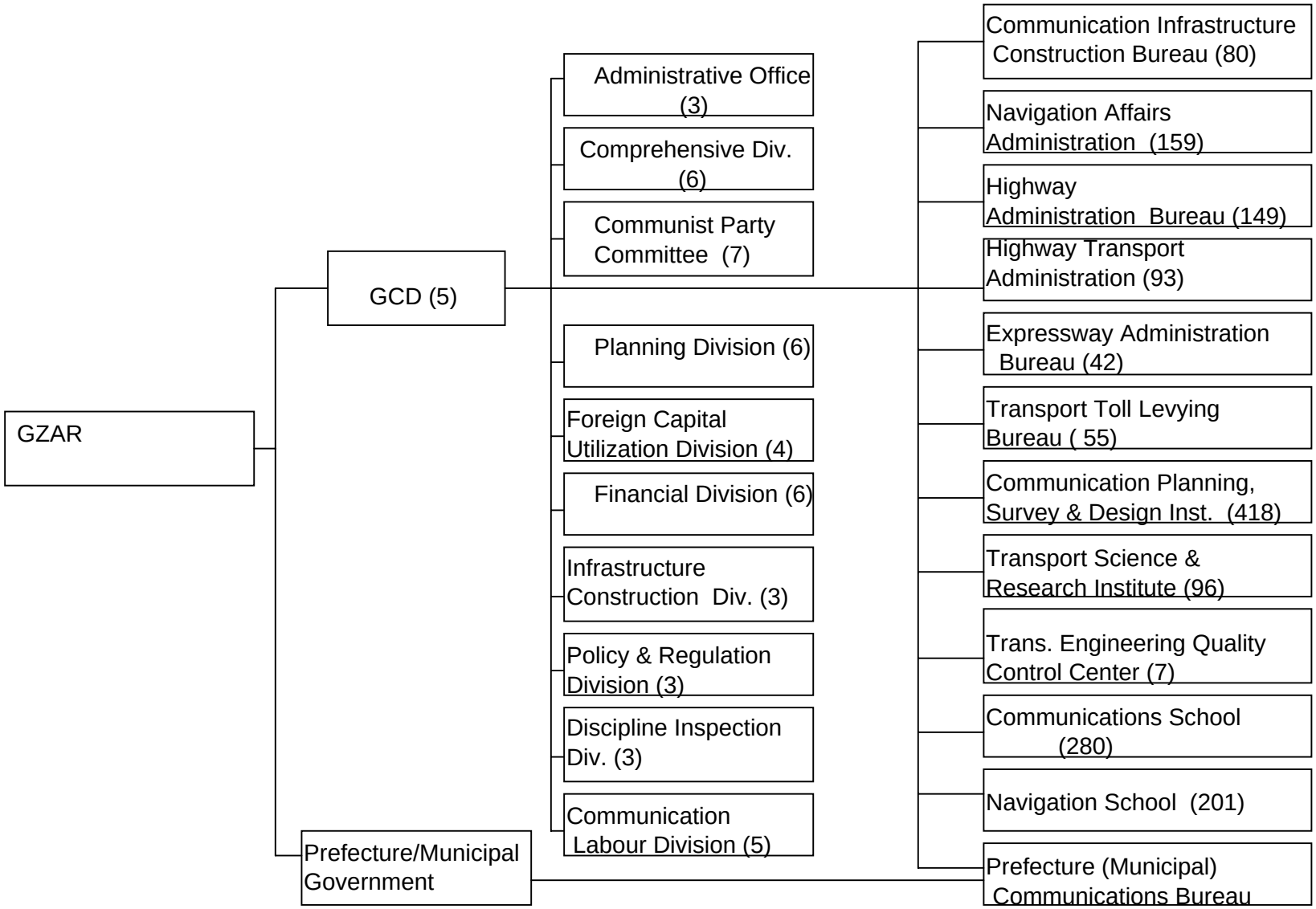
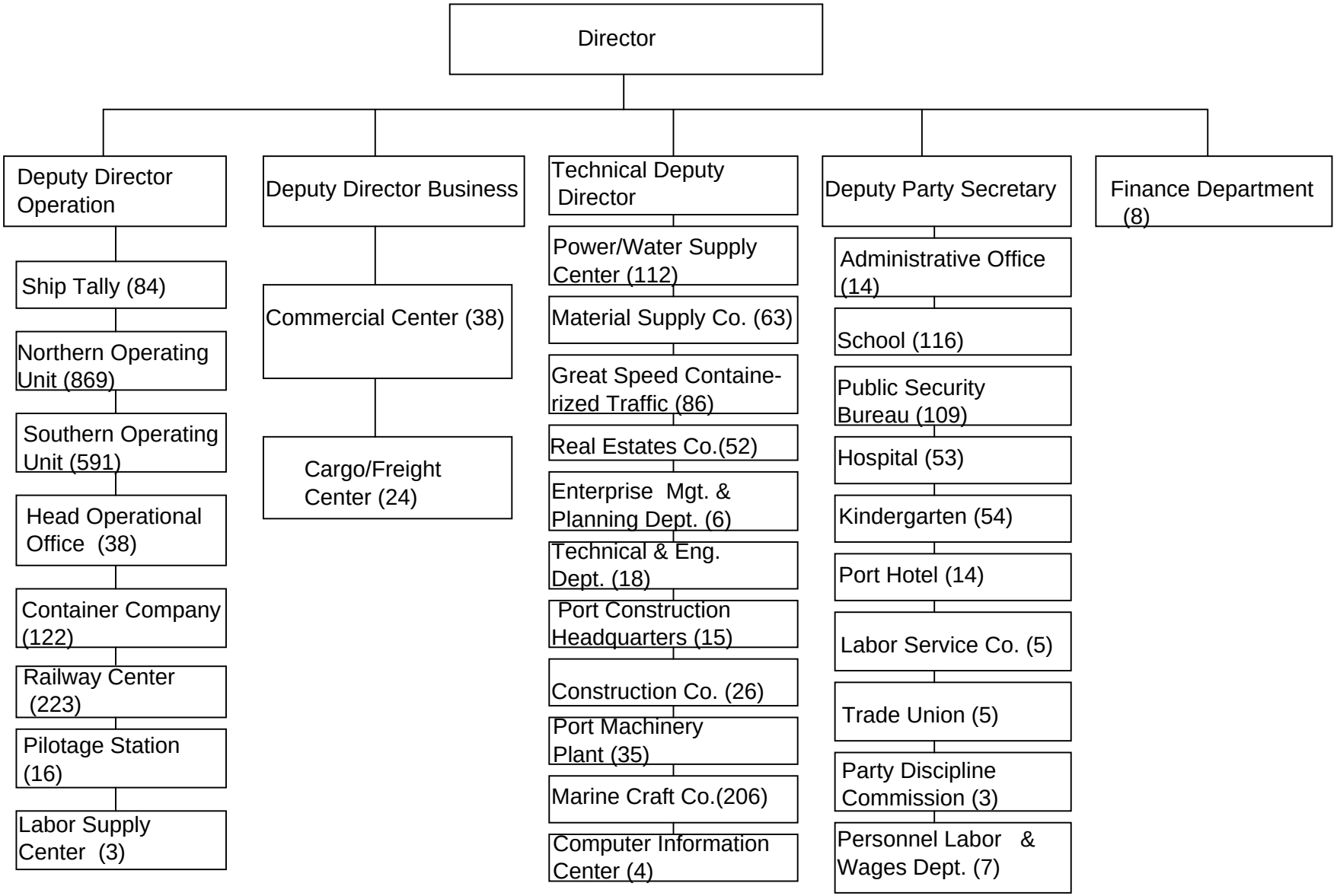


Figure A7.3: Fancheng Port Authority Organization Chart



COMPLIANCE WITH LOAN COVENANTS

Covenants	Reference to Loan Documents	Status of Compliance
Implementation Arrangements		
1. Guangxi and Fangcheng Port Authority (FCPA) shall make available promptly as needed, the funds, facilities, services, equipment, land, and other resources which are required, in addition to the proceeds of the loan, for the carrying out of the Project.	Loan Agreement (LA), Section 4.02	Complied with
2. The Project Management Office (PMO) established within Guangxi Communications Department (GCD) and FCPA shall be responsible for daily implementation of the Project.	Project Agreement (PA), Schedule, para. 1	Complied with
Training		
3. The Borrower shall submit to the Asian Development Bank (ADB) for review and approval a schedule of training of personnel from the agencies of the Borrower relevant to the port sector.	LA, Schedule 6, para. 5	Complied with
4. GCD and FCPA shall ensure that the benefits of the international training under the loan are distributed widely. Arrange and coordinate through Ministry of Communications inter-provincial workshops in which the returning trainees shall serve as resource persons and trainers to key personnel in other port authorities and provincial regulatory agencies.	LA, Schedule 6, para 6.	Complied with

	Covenants	Reference to Loan Documents	Status of Compliance
Environment			
5.	Mitigation measures, environmental monitoring program, and recommendations in the Summary Environmental Impact Assessment are to be implemented.	PA, Schedule para. 16	Complied with
6.	Fangcheng Municipal Government shall provide a wastewater treatment plan and solid waste treatment facilities by 31 December 1998.	PA, Schedule, para . 7	Being complied with (to be completed by 2003)
Land Acquisition			
7.	GCD is to monitor the impact of the highway Project on the resettled people.	PA, Schedule, para. 18.	Complied with
Reports and Accounts			
8.	GCD will furnish to ADB quarterly reports on the execution of the Project and on the operation and management of the project facilities.	PA, Section 2.08(b)	Complied with
9.	GCD and FCPA will (i) maintain separate accounts for the Project; (ii) have such accounts and related financial statements audited annually; and (iii) furnish to ADB, promptly after their preparation but not later than 9 months after the close of related fiscal year, the certified copies of such audited accounts and financial statements and the report of the auditors, all in the English language.	PA, Section 2.09	Complied with
10.	Guangxi shall provide ADB with	PA, Schedule, para. 14	Complied with

	Covenants	Reference to Loan Documents	Status of Compliance
	copies of the Guangxi Communications, Planning, Surveying and Designing Institute's Study (the GCPSDI Study) Inception Report and Draft Report for Fangcheng Port Development for 1995-2005. ADB's comments should be taken into account in finalizing investment plans during the planning period.		
Financial			
11.	Guangxi shall prepare a tariff report for the highway component and submit to ADB for review and comments.	PA, Schedule , para. 3	Complied with
12.	FCPA shall monitor the growth of the port traffic and formulate its future investment and financing plan with due consideration to its financial capabilities	PA, Schedule para 4	Complied with.
13.	FCPA shall conduct and complete revaluations, to current value, of all its fixed assets in operation and have such revaluation audited by auditors acceptable to ADB by 30 June 1996 and shall, thereafter, conduct such revaluation at least every 5 years.	PA, Schedule, para 6 (a)	Complied with
14.	FCPA shall earn and maintain an annual return on net fixed assets in operation no less than 7%.	PA, Schedule, para 6(b)	Not complied yet mainly due to the asset reevaluation in 1995 .
15.	FCPA shall maintain for each fiscal years after the fiscal year ending on 31 December 1995, a ratio of total working expenses to net operating revenue of not	PA, Schedule, 5(b)	Complied with except for 2001

	Covenants	Reference to Loan Documents	Status of Compliance
	higher than 60%.		
Others			
16.	Review and Monitoring. In addition to quarterly reports, Guangxi and FCPA shall provide ADB with an annual report at the end of each year.	PA, Schedule para 8	Complied with
17.	Guangxi shall provide to ADB any plan for transferring ownership or management of the project highway to any third party and give the opportunity to ADB for reviewing and commenting on such proposed plan.	PA, Schedule, para 20	Complied with
18.	FCPA shall use the port of highway performance indicators agreed to by ADB and Guangxi or FCPA for the purpose of improving management efficiency and the setting of road tolls or port tariffs.	PA Schedule, para 9	Complied with

FINANCIAL PERFORMANCE

A. Fangcheng Port

1. The financial performance of the Fangcheng Port Authority (FCPA) projected at appraisal from 1995 to 2002 is compared with the actual figures in tables A9.1 and A9.2. The financial performance data comprises key operation statistics and the financial statements of FCPA (income statement, balance sheet, and cash flow statement) annually submitted to the Asian Development Bank (ADB). However, they contained minor inconsistencies due to the large number of various business lines that are subject to different accounting rules and practices in the People's Republic of China (PRC). Therefore, the financial statements have been adjusted according to international accounting practices. The annual financial performance indicators are also shown for comparison, including covenanted ones (working ratio and return on the average net fixed assets) and noncovenanted ones (operating ratio and debt service coverage ratio). Based on the assumptions drawn from the actual performance, the forecast for 2 years from 2003 and 2004 are prepared in current prices projecting the trend of FCPA's businesses.

2. Operation statistics of FCPA indicate several salient features in the port businesses during project implementation: (i) unexpectedly high growth of domestic businesses in both cargo handling (especially bulk cargo) and ship calls; (ii) a slight decline in foreign ship calls in 1998 and 1999 reflecting the regional currency crisis; (iii) the volume of container cargoes handled much lower than forecast due to the port capacity constraint; and (iv) improving productivity reflecting a transition from labor intensive to capital-intensive operations and a positive result from the ongoing rationalization of FCPA businesses. The comparison of the appraisal and actual operating results are illustrated in figures A9.1 to A9.5. As found in major ports in the PRC, the general trend shows that a large proportion of foreign and domestic cargo tends to be containerized. The project berth 9 relieved the congestion of domestic bulk cargo handing and berth 10 has effectively helped to absorb such growing container demand since 2000.

3. The financial performance of FCPA has been satisfactory. The covenanted working ratio was met from 1996 to 2000. In 2001, the costs grew upon the completion of certain major facilities including berth 10. The tentative figures indicated that 60% of the working ration would not be fulfilled due to a sudden rise in fuel, material, and other costs, while maintenance and administrative costs decreased as a result of FCPA's cost-cutting program. The reason for the increased fuel and material expenses is the newly procured 43 units of heavy truck for reinforcing the container operations. The other costs increased due mainly to expenses incurred by FCPA's construction units associated with increased expansion of the facilities. The annual return on net fixed asset, which is covenanted for more than 7%, were not achieved during the implementation period. It is likely that the appraisal target was set on the high side, taking the historical prices of the assets into account. FCPA has conducted reevaluation from time to time since 1995, most recently in 2000. Therefore, the indicator has properly reflected the correlation between the fixed assets and the profits generated by such assets. Given the situation of expanding the port facilities for the coming years, these covenanted indicators are unlikely to be met due to inegligible start-up cost and increasing interest expenses. Separation of noncore businesses should be expedited to improve the efficiency and competitiveness of FCPA. The debt service coverage ratio is still high owing to the relatively low debt level. Cost-effective investment could be sourced from borrowings given the favorable financial market situation. Overall, the financial standing of FCPA is considered sound and sustainable for all challenges

that FCPA will face after the new Port Law is enacted for further deregulation and autonomy of each port authority in the PRC.

4. There are two important issues to be considered for FCPA's business strategy: tariff and investment. Deregulation of the port sector and the upgrading of the facilities at every port in the PRC have intensified the competition on the tariff. While Ministry of Communications issues the standard tariffs, each port has a certain authority and flexibility to offer an attractive price to its customers. This has led to tariff dumping across the ports. While the marketing viewpoint is important, the tariffs should be based on the cost-recovery principle rather than a short-sighted business prospect. Cost control, including financial charges and capacity building for efficient operations, will thus enable FCPA to be competitive in the medium and long term. Further, given the long lead time of capital investment between the formulation of the investment plan and the actual completion of the facilities, keen insight into the future trends and needs of the market is a key to differentiate FCPA from the competitor ports in the PRC.

5. The outlook of FCPA businesses is positive for four reasons. First, the ongoing construction of berths 12 and 13 will increase the cargo-handling capacity, particularly container cargoes, and will thus improve the allocation efficiency of FCPA's berths. Second, the PRC's accession to the World Trade Organization in December 2001 will probably result in increased trading volume of both incoming and outgoing cargoes and ships. Third, unlike the other ports, the railway share in land transportation from and to Fangcheng Port is significantly high (approximately 40% estimated at appraisal). The transport bottleneck at Nanning will be resolved in 2002 through the improved railroad capacity between Nanning and Kunming. Fourth, streamlining FCPA's organization, including disposal of noncore businesses, is ongoing. The positive effects are expected to arise in the medium term.

B. Qinfang Expressway

6. The financial performance of Qinfang Expressway is assessed in comparison with the appraisal projection in Table A9.3. The actual financial performance from 1998 to 2001 was satisfactory, as the cash flow is sufficient to cover the sound operating and maintenance expenses as well as the debt service to ADB. No financial performance indicators are covenanted. Qinfang Expressway has three toll gates: in Qinzhou, Fangcheng City, and Fancgheng Port. Including toll gate personnel, approximately 100 staff are currently working for Qinfang Expressway in the Guangxi Communications Department. As there is no tunnel, the routine maintenance costs are relatively low. Protection against landslides is adequate and the likelihood of emergency spending due to natural disasters is low. The working ratio is approximately 10%, which indicates a good efficiency. Overall, the operation appears sustainable. Due to a large depreciation expense, Qinfang Expressway will achieve its full cost recovery only after 2006. The dominant railway share in the corridor provides Qinfang Expressway with a moderate growth of traffic. However, the low debt ratio (16.9%) allows Qinfang Expressway adequate debt service capacity for the project life (approximately for 20 years).

7. Sound cash flow, low debt level, and good physical facilities may attract nongovernmental financing for this 45-kilometer short section to be bundled with other expressways. However, the Guangxi Communications Department does not consider private sector modalities at this stage. It will notify ADB accordingly for its concurrence if such opportunity arises in the future.

Table A9.1: Actual Financial Performance and Appraisal Financial Projections of Fangcheng Port Authority (FCPA)

(CNY thousand)

Item	1995		1996		1997		1998		1999		2000		2001		2002		2003	2004
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Tentative	Appraisal	Forecast	Forecast	Forecast
Domestic Inflation	15.0%	17.1%	10.0%	8.3%	7.0%	2.8%	7.0%	-0.8%	7.0%	-1.4%	7.0%	-0.5%	7.0%	0.7%	7.0%	1.0%	2.0%	3.0%
Operational Statistics:																		
Foreign Throughput ('000 tons)	4,791	4,500	5,831	4,880	6,137	6,259	7,003	6,593	7,648	7,063	8,322	8,315	8,728	9,244	9,007	10,209	11,330	12,575
Domestic Throughput ('000 tons) of w/c	181	138	220	205	231	242	264	472	288	1,017	314	912	329	788	339	725	696	710
Container ('000 TEUs)	6.7	5.0	13.3	4.2	20.0	2.9	26.7	3.4	42.7	4.9	62.7	15.9	85.3	20.1	89.6	28.2	38.0	49.4
Foreign Ship Calls	742	724	871	767	907	759	1,010	666	1,084	611	1,161	747	1,206	786	1,237	817	842	867
Domestic Ship Calls	66	63	77	106	81	108	90	123	96	182	103	222	107	268	110	308	348	394
Average Foreign Cargo Tariff/ton	41.9	32.0	54.5	32.0	54.5	32.0	60.3	24.8	60.3	25.5	67.2	19.8	67.2	19.9	75.9	19.9	19.9	19.9
Average Domestic Cargo Tariff/ton	22.1	31.7	26.1	20.0	26.1	8.3	28.9	11.2	28.9	7.4	32.2	13.0	32.2	13.8	36.3	21.3	24.7	27.6
Average Container Cargo Tariff/ton	589.3	1,274.0	766.1	1,299.5	766.1	651.4	873.4	613.8	873.4	427.7	995.7	326.7	995.7	334.9	1,135.1	328.2	311.8	296.2
Average Foreign Ship Revenue ('000)	20.5	14.9	26.6	15.6	26.6	36.1	30.3	45.6	30.3	60.3	34.6	45.6	34.6	42.3	39.4	43.0	43.0	43.0
Average Domestic Ship Revenue('000)	17.0	5.3	20.1	10.8	20.1	10.6	22.9	10.3	22.9	8.4	25.5	5.5	25.5	13.0	29.8	13.0	13.0	13.0
Number of Employees	3,220	3,089	3,779	3,086	3,918	3,239	4,305	3,200	4,543	3,174	4,783	3,121	4,900	3,057	4,978	3,026	2,996	2,972
Throughput/ Employees ('000) ton	1.5	1.5	1.6	1.6	1.6	2.0	1.7	2.2	1.7	2.5	1.8	3.0	1.8	3.3	1.9	3.6	4.0	4.5
Revenue																		
Cargo Handling Charges	206,664	149,877	328,288	170,900	347,619	172,907	440,950	190,988	487,251	190,017	600,055	204,037	638,954	219,058	746,870	218,816	242,911	270,062
Foreign	198,743	139,219	312,338	164,671	326,262	164,177	410,043	181,345	441,669	180,423	527,572	192,066	543,409	205,996	632,829	203,357	225,685	250,490
Domestic	3,992	4,306	5,734	719	6,034	6,841	7,616	7,556	8,317	7,516	10,088	6,769	10,580	6,323	12,338	6,213	5,368	4,928
Container	3,929	6,352	10,216	5,510	15,323	1,889	23,291	2,087	37,265	2,078	62,395	5,202	84,965	6,739	101,703	9,246	11,858	14,644
Ship Charges	**16,312**	**11,114**	**24,731**	**13,131**	**25,768**	**28,573**	**32,693**	**31,666**	**35,101**	**38,399**	**42,839**	**35,308**	**44,509**	**36,718**	**52,036**	**39,168**	**40,745**	**42,421**
Foreign	15,189	10,780	23,176	11,981	24,147	27,430	30,636	30,399	32,893	36,863	40,144	34,084	41,709	33,224	48,762	35,150	36,204	37,291
Domestic	1,123	334	1,556	1,150	1,621	1,143	2,057	1,267	2,208	1,536	2,695	1,224	2,800	3,494	3,273	4,018	4,540	5,131
Other Services	**23,274**	**52,750**	**35,287**	**41,411**	**36,766**	**41,350**	**46,647**	**41,791**	**50,083**	**49,790**	**61,123**	**46,190**	**63,507**	**66,925**	**74,246**	**73,618**	**77,298**	**81,163**
Less: Business Tax	8,480	5,757	13,343	7,759	14,083	8,826	17,865	10,085	19,629	10,477	24,130	10,856	25,574	10,272	29,894	12,334	13,365	14,507
Net Operating Revenue	**237,770**	**207,984**	**374,963**	**217,683**	**396,070**	**234,004**	**502,425**	**254,360**	**552,806**	**267,729**	**679,887**	**274,680**	**721,397**	**312,429**	**843,258**	**319,267**	**347,590**	**379,139**

continued on next page

continued…

Table A9.1: Actual Financial Performance and Appraisal Financial Projections of Fangcheng Port Authority (FCPA)

(CNY thousand)

Item	1995		1996		1997		1998		1999		2000		2001		2002		2003	2004
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Tentative	Appraisal	Forecast	Forecast	Forecast
Working	**151,330**	**135,133**	**200,849**	**130,906**	**226,933**	**140,493**	**269,897**	**150,342**	**308,798**	**161,576**	**352,407**	**166,732**	**390,286**	**216,019**	**427,206**	**220,979**	**227,810**	**240,056**
Expenses																		
Personnel	47,200	37,921	62,324	42,818	70,102	51,529	82,421	55,141	93,062	61,666	104,846	64,597	114,920	67,931	124,926	82,690	95,541	110,651
Fuel & Materials	27,059	10,363	37,052	17,564	42,307	15,072	51,660	16,129	60,365	18,037	70,288	18,677	78,874	43,504	87,088	43,939	44,818	46,162
Maintenance	33,062	15,943	43,657	25,249	49,353	27,148	58,772	29,051	67,517	32,489	77,341	28,168	85,982	25,251	94,349	25,504	26,014	26,794
Administration	15,054	29,675	19,583	31,620	21,949	33,186	25,574	35,512	28,725	33,158	32,200	38,331	35,210	35,948	38,215	36,308	37,034	38,145
Others	28,955	41,231	38,233	13,655	43,222	13,558	51,470	14,509	59,129	16,226	67,733	16,959	75,300	43,385	82,628	32,539	24,404	18,303
Depreciation Expenses	**39,395**	**21,637**	**55,747**	**34,485**	**73,542**	**37,362**	**98,710**	**39,868**	**121,835**	**38,496**	**146,030**	**37,658**	**172,277**	**39,723**	**201,371**	**55,448**	**60,059**	**65,120**
Total Operating Expenses	**190,725**	**156,770**	**256,596**	**165,391**	**300,475**	**177,855**	**368,608**	**190,210**	**430,633**	**200,072**	**498,436**	**204,390**	**562,563**	**255,742**	**628,577**	**276,427**	**287,869**	**305,175**
Operating Profit(Loss)	47,045	51,214	118,366	52,292	95,595	56,149	133,817	64,150	122,173	67,657	181,451	70,290	158,833	56,687	214,681	42,840	59,721	73,964
Non-Operating Income	2,700	361	3,100	506	3,351	2,254	3,687	2,082	4,018	896	4,375	109	4,727	2,006	5,090	1,505	1,128	1,072
Non-Operating Expenses	6,382	5,782	7,325	5,182	7,920	6,213	8,713	5,900	9,495	4,896	10,339	5,389	11,170	5,048	12,029	5,301	5,566	5,844
Interest Expenses	4,782	3,928	4,137	554	3,619	(1,673)	3,100	232	49,831	355	46,950	(53)	43,926	6,942	40,738	18,342	17,829	20,577
Net Profit(Loss) Before Tax	38,581	41,865	110,004	47,063	87,407	53,863	125,691	60,100	66,865	63,302	128,537	65,063	108,464	46,702	167,004	20,701	37,455	48,615
Income Tax Payable	12,731	10,690	36,301	15,189	28,845	17,915	41,478	21,189	22,066	21,188	42,417	22,793	35,793	6,942	55,111	6,831	12,360	16,043
Net Profit (Loss) for the Year	**25,849**	**31,175**	**73,703**	**31,874**	**58,563**	**35,948**	**84,213**	**38,911**	**44,799**	**42,114**	**86,120**	**42,270**	**72,671**	**39,759**	**111,893**	**13,870**	**25,095**	**32,572**
Appropriation of Net Profit	0	15,164	0	21,588	0	25,164	0	25,357	0	62,557	0	37,562	0	31,074	0	9,709	17,566	22,801
Net Profit (Loss) after Distribution	25,849	16,011	73,703	10,287	58,563	10,784	84,213	13,554	44,799	(20,443)	86,120	4,708	72,671	8,685	111,893	4,161	7,528	9,772
Performance Indicators																		
Working Ratio (covenanted at <=60%)	64%	65%	54%	60%	57%	60%	54%	59%	56%	60%	52%	60%	54%	**69%**	51%	**69%**	**66%**	**63%**
Operating Ratio	80%	75%	68%	76%	76%	76%	73%	75%	78%	75%	73%	74%	78%	82%	75%	87%	83%	80%

Source: Asian Development Bank staff estimates.

Table A9.2: Actual Financial Performance and Appraisal Financial Projections of Fangcheng Port Authority (FCPA)

(CNY thousand)

Item	1995		1996		1997		1998		1999		2000		2001		2002		2003	2004
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Tentative	Appraisal	Forecast	Forecast	Forecast
Balance Sheet																		
Current Assets:	128,107	129,638	272,597	185,677	377,912	210,399	447,958	326,240	342,358	391,645	328,667	344,675	291,590	347,595	329,072	309,041	270,976	239,470
Cash	29,114	24,979	133,102	56,193	237,954	83,924	276,932	140,943	158,635	174,806	109,955	141,932	62,374	120,726	66,614	105,625	61,099	22,570
Receivables	65,628	81,736	103,495	97,839	109,321	101,949	138,677	161,439	152,583	189,638	187,660	158,698	199,117	185,922	232,752	165,801	174,461	180,421
Inventory, Prepaid Expenses & Others	33,365	22,923	36,000	31,645	30,637	24,526	32,349	23,858	31,140	27,201	31,053	44,045	30,100	40,947	29,706	37,615	35,416	36,478
Fixed Assets:	562,268	1,063,971	784,507	1,052,142	983,749	1,121,600	1,295,244	1,210,881	1,509,398	1,294,115	1,741,100	1,376,954	1,975,797	1,587,293	2,228,262	1,667,093	1,789,593	1,908,375
Gross Assets in Service	610,774	1,056,833	864,296	1,084,188	1,140,182	1,229,096	1,530,395	1,255,250	1,888,909	1,339,154	2,264,025	1,301,881	2,670,969	1,849,191	3,122,024	2,004,916	2,171,616	2,354,616
Less: Accumulated Depreciation	97,979	126,911	153,726	161,220	227,268	198,702	325,979	239,166	447,813	272,582	593,842	307,511	766,119	384,544	967,490	439,992	500,051	565,171
Net Assets in Service	512,795	929,922	710,570	922,968	912,914	1,030,394	1,204,416	1,016,084	1,441,097	1,066,572	1,670,183	994,370	1,904,850	1,464,647	2,154,534	1,564,924	1,671,565	1,789,445
Capital-Work-in-Progress	30,175	118,898	53,115	126,783	53,115	91,206	72,118	192,550	50,290	214,892	52,956	364,940	53,537	106,294	56,546	85,000	100,000	100,000
Other Fixed Assets	19,298	15,151	20,822	2,391	17,720	0	18,710	2,247	18,011	12,651	17,961	17,644	17,410	16,352	17,182	17,170	18,028	18,929
Total Assets	690,375	1,193,609	1,057,104	1,237,819	1,361,661	1,331,999	1,743,202	1,537,121	1,851,756	1,685,760	2,069,767	1,721,629	2,267,387	1,934,888	2,557,334	1,976,134	2,060,569	2,147,845
Current Liabilities:	116,188	150,595	174,279	140,283	183,414	125,233	224,571	144,683	228,249	124,497	277,333	89,107	293,785	107,808	337,656	112,360	117,669	122,207
Short-Term Borrowing	0	9,300	0	800	0	800	0	0	0	1,800	0	1,800	0	1,800	0	1,800	1,800	1,800
Payables	51,974	68,163	68,604	71,123	77,396	55,995	91,816	55,753	104,893	43,900	119,543	45,396	132,300	40,328	144,750	38,312	36,396	34,576
Other Short-Term Liabilities	64,214	73,132	105,675	68,360	106,018	68,438	132,755	88,930	123,356	78,797	157,789	41,911	161,485	65,680	192,906	72,248	79,473	85,831
Long-Term Liabilities:	169,107	122,504	321,965	120,425	477,323	147,455	632,681	163,411	585,629	241,344	536,214	269,060	486,229	360,635	433,445	383,998	411,329	428,495
Borrowing from ADB	26,560	0	106,240	0	185,920	0	265,600	13,911	259,050	23,250	252,048	79,990	244,563	154,285	236,562	149,471	144,360	138,863
Other Borrowings / Bond	142,547	122,504	215,725	120,425	291,403	147,455	367,081	149,500	326,579	175,500	284,165	189,070	241,665	172,325	196,883	200,502	232,944	255,607
Other Long-Term Liabilities	0	0	0	0	0	0	0	0	0	42,593	0	0	0	34,025	0	34,025	34,025	34,025
Capital:	405,080	920,510	560,860	977,111	700,924	1,059,311	885,950	1,229,027	1,037,877	1,319,918	1,256,221	1,363,462	1,487,373	1,466,445	1,786,233	1,479,777	1,531,571	1,597,143
Paid-In-Capital	159,020	162,507	180,020	186,973	201,020	228,538	222,020	362,705	222,020	409,605	222,020	455,919	222,020	493,816	222,020	517,816	542,816	572,816
Retained Earnings	78,723	79,774	152,425	111,909	210,988	110,877	295,202	179,959	340,001	222,074	426,121	219,304	498,792	257,735	610,684	246,823	271,917	304,490
Reevaluation Reserves	167,338	678,229	228,415	678,229	288,916	719,896	368,728	686,363	475,856	688,239	608,080	688,239	766,561	714,894	953,529	715,138	716,838	719,838
Total Liabilities & Capital	690,375	1,193,609	1,057,104	1,237,819	1,361,661	1,331,999	1,743,202	1,537,121	1,851,756	1,685,760	2,069,767	1,721,629	2,267,387	1,934,888	2,557,334	1,976,134	2,060,569	2,147,845
(covenanted at =>7%)																		
Cash Flow Statements																		
Source of Funds:																		
Funds from Operations	**82,758**	**67,430**	**169,889**	**82,101**	**164,568**	**89,552**	**227,502**	**101,476**	**238,531**	**102,644**	**321,516**	**114,313**	**324,668**	**98,306**	**409,113**	**94,492**	**115,342**	**134,312**
Operating Profit (Loss)	47,045	51,214	118,366	52,292	95,595	56,149	133,817	64,150	122,173	67,657	181,451	70,290	158,833	56,687	214,681	42,840	59,721	73,964
Add-Back Depreciation	39,395	21,637	55,747	34,485	73,542	37,362	98,710	40,025	121,835	38,587	146,030	49,183	172,277	43,623	201,371	55,448	60,059	65,120
Net Non-Operating Income	(3,682)	(5,421)	(4,225)	(4,676)	(4,569)	(3,959)	(5,026)	(2,699)	(5,477)	(3,600)	(5,964)	(5,160)	(6,443)	(2,004)	(6,939)	(3,796)	(4,437)	(4,772)

continued on next page

continued…

Table A9.2: Actual Financial Performance and Appraisal Financial Projections of Fangcheng Port Authority (FCPA)

(CNY thousand)

Item	1995		1996		1997		1998		1999		2000		2001		2002		2003	2004
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Tentative	Appraisal	Forecast	Forecast	Forecast
Funds from Financing	**68,126**	**15,827**	**188,358**	**28,636**	**188,358**	**76,750**	**188,358**	**148,645**	**0**	**87,939**	**0**	**135,190**	**0**	**135,222**	**0**	**64,000**	**70,000**	**66,000**
Government's Capital Contribution	12,340	15,827	21,000	24,466	21,000	45,750	21,000	59,734	0	46,800	0	29,928	0	22,538	0	24,000	25,000	30,000
Other Loans / Bond issue	29,226	0	87,678	4,170	87,678	31,000	87,678	75,000	0	31,800	0	44,000	0	0	0	40,000	45,000	36,000
Loan from ADB	26,560	0	79,680	0	79,680	0	79,680	13,911	0	9,339	0	61,262	0	112,684	0	0	0	0
Total Source	**150,884**	**83,257**	**358,247**	**110,737**	**352,926**	**166,302**	**415,860**	**250,121**	**238,531**	**190,583**	**321,516**	**249,503**	**324,668**	**233,528**	**409,113**	**158,492**	**185,342**	**200,312**
Application of Funds:																		
Capital Expenditure	98,495	54,856	215,385	29,518	215,385	117,726	329,403	102,983	229,559	111,146	245,558	188,563	249,043	180,082	267,097	160,000	180,000	180,000
Change in Working Capital and Other Asset	9,163	108	(16,065)	22,878	(11,774)	(2,713)	(9,100)	65,698	8,320	20,031	(14,143)	50,411	(6,499)	27,060	(10,857)	(27,187)	2,011	3,386
Debt Service	18,285	9,528	18,637	10,904	15,619	5,643	15,100	3,132	96,882	4,355	96,365	20,614	93,910	26,143	93,522	34,979	35,498	39,411
Interest Payment	4,785	3,928	4,137	554	3,619	1,673	3,100	232	49,830	355	46,950	667	43,925	7,558	40,739	18,342	17,829	20,577
Other Loans / Bond	4,785	3,928	4,137	554	3,619	1,673	3,100	232	31,504	355	29,076	667	26,534	2,646	23,864	8,055	7,874	10,849
Loan from ADB	0	0	0	0	0	0	0	0	18,326	0	17,874	0	17,391	4,912	16,875	10,287	9,955	9,727
Principal Repayment	13,500	5,600	14,500	10,350	12,000	3,970	12,000	2,900	47,052	4,000	49,415	19,947	49,985	18,585	52,783	16,637	17,669	18,834
Other Loans / Bond	13,500	5,600	14,500	10,350	12,000	3,970	12,000	2,900	40,502	4,000	42,413	15,450	42,500	14,310	44,782	11,823	12,558	13,337
Loan from ADB	0	0	0	0	0	0	0	0	6,550	0	7,002	4,497	7,485	4,275	8,001	4,814	5,111	5,497
Income Tax Paid	12,731	10,690	36,301	15,189	28,845	17,915	41,478	21,289	22,066	21,188	42,417	22,793	35,793	21,449	55,111	6,831	12,360	16,043
Total Application	**138,674**	**75,182**	**254,258**	**78,488**	**248,075**	**138,571**	**376,881**	**193,102**	**356,827**	**156,720**	**370,197**	**282,381**	**372,247**	**254,734**	**404,873**	**174,623**	**229,869**	**238,840**
Net Cash Flow for the Year	**12,209**	**8,075**	**103,988**	**32,249**	**104,852**	**27,731**	**38,978**	**57,019**	**(118,296)**	**33,863**	**(48,681)**	**(32,878)**	**(47,580)**	**(21,206)**	**4,240**	**(16,131)**	**(44,527)**	**(38,528)**
Cash Position at the Beginning	16,904	16,904	29,113	24,979	133,102	57,228	237,953	84,959	276,932	141,978	158,636	175,841	109,955	142,963	62,376	121,757	105,625	61,099
Cash Position at the End	29,113	24,979	133,102	57,228	237,953	84,959	276,932	141,978	158,636	175,841	109,955	142,963	62,376	121,757	66,615	105,625	61,099	22,570
Performance Indicators																		
Debt Service Coverage	4.5	7.1	9.1	7.5	10.5	15.9	15.1	32.4	2.5	23.6	3.3	5.5	3.5	3.8	4.4	2.7	3.2	3.4

Source: Asian Development Bank staff estimates.

Figure.A9.1: Foreign Cargo Throughputs

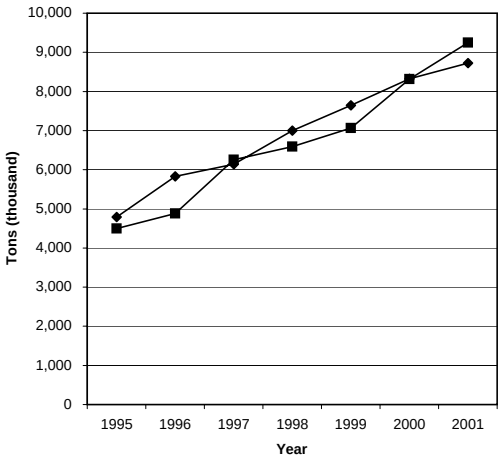


Figure. A9. 2: Domestic Cargo Throughputs

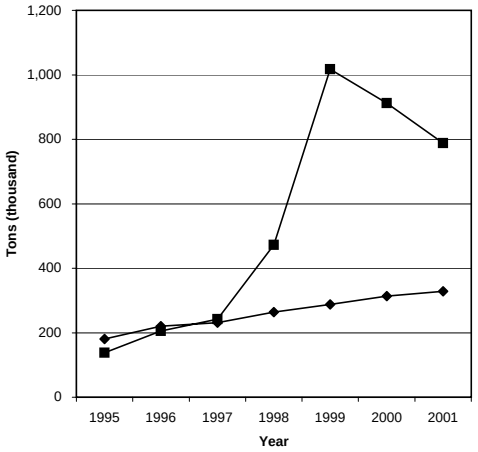


Figure. A9.3: Container Cargo Throughputs

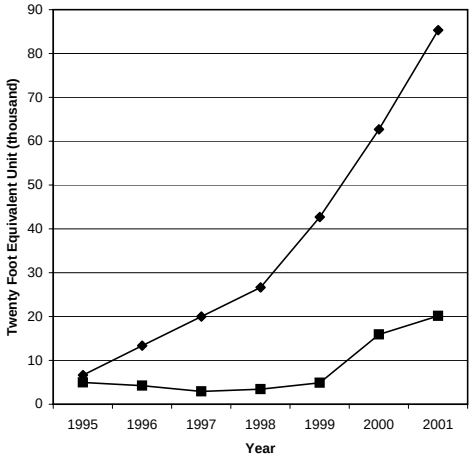


Figure A9.4: Foreign Ship Calls

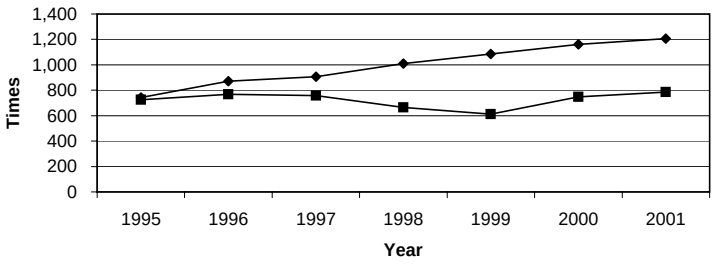


Figure A9.5: Domestic Ship Calls

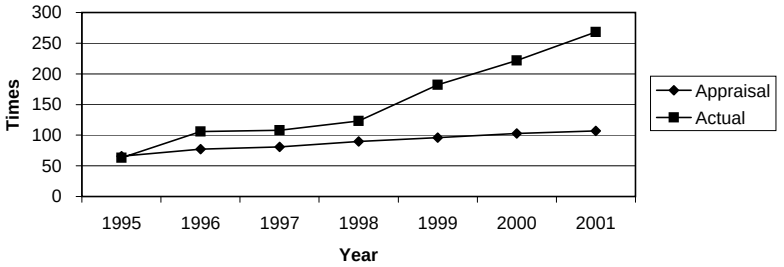


Table A9.3: Actual Financial Performance and Appraisal Projections for the Project Highway (Qinfang Expressway)

(CNY million)

Item	1995		1996		1997		1998		1999		2000		2001		2002		2003
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Forecast	Forecast
Proforma Income Statement																	
Toll Revenue	0.0	0.0	0.0	0.0	0.0	0.0	43.2	36.9	47.5	40.2	52.2	43.5	68.3	44.7	77.9	46.5	48.5
Freight	0.0	0.0	0.0	0.0	0.0	0.0	27.4	21.4	30.1	22.7	33.1	24.7	43.1	25.4	47.9	26.8	27.9
Passenger	0.0	0.0	0.0	0.0	0.0	0.0	18.1	17.4	19.9	19.6	21.9	21.1	28.7	21.7	34.1	22.2	23.1
Less: Business Tax	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.9	2.5	2.1	2.7	2.3	3.6	2.4	4.1	2.4	2.6
Working Expenses	0.0	0.0	0.0	0.0	0.0	0.0	2.9	3.3	3.1	3.5	3.3	4.7	3.6	4.9	3.8	5.0	5.2
Personnel	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.2	1.4	1.3	1.5	1.7	1.7	1.7	1.8	1.8	1.8
Materials	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.4	0.7	0.4	0.8	0.4	0.8	0.8
Power & Maintenance	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.1	1.0	1.1	1.2	1.2	1.2	1.3	1.2	1.2
Administration	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.4	0.2	0.6	0.2	0.7	0.2	0.7	0.8
Others	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.3	0.1	0.5	0.1	0.5	0.1	0.5	0.5
Depreciation Expenses	0.0	0.0	0.0	0.0	0.0	0.0	32.0	36.0	32.0	38.5	32.0	43.3	32.0	48.1	32.0	48.1	48.1
Total Operation Expenses	0.0	0.0	0.0	0.0	0.0	0.0	34.9	39.3	35.1	42.0	35.3	48.0	35.6	53.0	35.8	53.1	53.2
Operating Profit (Loss)	0.0	0.0	0.0	0.0	0.0	0.0	8.3	(2.5)	12.4	(1.8)	16.9	(4.4)	32.7	(8.2)	42.1	(6.6)	(4.7)
Interest Expense	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	11.5	0.0	11.2	0.0	10.9	8.4	10.5	10.2	9.9
Net Profit (Loss) before Income Tax	0.0	0.0	0.0	0.0	0.0	0.0	(3.2)	(2.5)	0.9	(1.8)	5.7	(4.4)	21.8	(16.6)	31.6	(16.8)	(14.6)
Income Tax Payable	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Profit after Income Tax	0.0	0.0	0.0	0.0	0.0	0.0	(3.2)	(2.5)	0.9	(1.8)	5.7	(4.4)	21.8	(16.6)	31.6	(16.8)	(14.6)
Proforma Balance Sheet Year Ending 31 December																	
Current Assets	0.0	0.9	0.0	0.0	0.0	0.0	29.1	17.0	58.0	27.5	91.3	51.2	140.5	65.0	199.1	91.6	120.1
Cash	0.0	0.9	0.0	0.0	0.0	0.0	27.7	13.2	56.4	23.6	89.6	47.6	138.6	53.9	196.9	88.3	117.1
Account Receivables	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	1.4	1.1	1.5	0.5	1.7	1.4	2.0	1.9	1.6
Inventories & Others	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.3	0.1	2.8	0.1	3.1	0.1	9.7	0.1	1.4	1.4
Fixed Assets	168.9	2.1	548.4	303.3	959.9	778.2	927.9	949.5	895.9	952.9	863.9	930.9	831.9	896.1	799.9	848.0	799.9
Gross Assets in Operation	0.0	0.0	0.0	0.0	0.0	0.0	959.9	985.5	959.9	1,027.4	959.9	1,048.7	959.9	1,061.9	959.9	1,061.9	1,061.9
Less: Accumulated Depreciation	0.0	0.0	0.0	0.0	0.0	0.0	32.0	36.0	64.0	74.5	96.0	117.8	128.0	165.8	160.0	213.9	261.9
Net Assets in Operation	0.0	0.0	0.0	0.0	0.0	0.0	927.9	949.5	895.9	952.9	863.9	930.9	831.9	896.0	799.9	848.0	799.9
Construction in Progress	168.9	2.1	548.4	303.3	959.9	778.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Assets	168.9	3.0	548.4	303.3	959.9	778.2	957.0	966.5	953.9	980.3	955.2	982.1	972.4	961.1	999.0	939.6	920.0
Current Liabilities	0.0	0.0	0.0	0.3	0.0	2.2	0.2	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.0
ADB Loan	33.2	0.0	99.6	0.0	166.0	43.0	166.0	142.0	161.9	157.6	157.5	163.8	152.9	159.3	147.9	154.7	149.7
Capital	135.7	3.0	448.8	303.0	793.9	733.0	790.7	824.5	791.6	822.7	797.3	818.3	819.2	801.7	850.8	784.9	770.3
Paid-In Capital	135.7	3.0	448.8	303.0	793.9	733.0	793.9	827.0	793.9	827.0	793.9	827.0	793.9	827.0	793.9	827.0	827.0
Retained Eanings	0.0	0.0	0.0	0.0	0.0	0.0	(3.2)	(2.5)	(2.3)	(4.3)	3.4	(8.7)	25.2	(25.3)	56.8	(42.1)	(56.7)
Total Liabilities and Capital	168.9	3.0	548.4	303.3	959.9	778.2	957.0	966.5	953.9	980.3	955.2	982.1	972.4	961.1	999.0	939.6	920.0

continued next page

continued

Table A9.3: Actual Financial Performance and Appraisal Projections for the Project Highway (Qinfang Expressway)

(CNY million)

Item	1995		1996		1997		1998		1999		2000		2001		2002		2003
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual	Appraisal	Forecast	Forecast
Proforma Cash Flow Statement																	
Year Ending 31 December																	
Sources of Funds:	168.9	3.0	379.5	300.0	411.5	473.0	40.3	226.5	44.4	52.3	48.9	49.1	64.7	39.8	74.1	41.5	43.4
Funds from Operations	0.0	0.0	0.0	0.0	0.0	0.0	40.3	33.6	44.4	36.7	48.9	38.8	64.7	39.8	74.1	41.5	43.4
Operating Profit (Loss)	0.0	0.0	0.0	0.0	0.0	0.0	8.3	(2.5)	12.4	(1.8)	16.9	(4.4)	32.7	(8.2)	42.1	(6.6)	(4.7)
Add-Back Depreciation	0.0	0.0	0.0	0.0	0.0	0.0	32.0	36.0	32.0	38.5	32.0	43.3	32.0	48.1	32.0	48.1	48.1
Capital from GCD & MOC	135.7	3.0	313.1	300.0	345.1	430.0	0.0	94.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADB Loan	33.2	0.0	66.4	0.0	66.4	43.0	0.0	98.9	0.0	15.6	0.0	10.3	0.0	0.0	0.0	0.0	0.0
Application of Funds:	168.9	2.1	379.5	300.9	411.5	473.0	12.7	213.3	15.7	41.9	15.7	25.1	15.7	33.6	15.7	7.1	14.6
Capital Expenditure	168.9	2.1	379.5	301.2	411.5	474.9	0.0	207.3	0.0	41.8	0.0	21.3	0.0	13.2	0.0	0.0	0.0
Change in Working Capital	0.0	0.0	0.0	(0.3)	0.0	(1.9)	1.2	6.0	0.1	0.1	0.1	(0.3)	0.2	7.5	0.3	(7.8)	(0.3)
Debt Service	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	15.6	0.0	15.6	4.1	15.5	12.9	15.5	14.9	14.9
ADB Loan Interest	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	11.5	0.0	11.2	0.0	10.9	8.4	10.5	10.2	9.9
ADB Loan Repayment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	4.4	4.1	4.7	4.5	5.0	4.7	5.0
Income Tax Paid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Cashflow	0.0	0.9	0.0	(0.9)	0.0	0.0	27.6	13.2	28.7	10.4	33.2	24.1	49.0	6.3	58.4	34.4	28.8
Cash at Beginning	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	27.7	13.2	56.4	23.6	89.6	47.6	138.6	53.9	88.3
Cash at End	0.0	0.9	0.0	0.0	0.0	0.0	27.7	13.2	56.4	23.6	89.6	47.6	138.6	53.9	196.9	88.3	117.1
Debt Service Ratio (not covenanted)							3.5		2.8		3.1	9.6	4.2	3.1	4.8	2.8	2.9

Source: Asian Development Bank staff estimates.

GCD= Guangxi Communications Department, MOC = Ministry of Communications

FINANCIAL REEVALUATION

A. Fangcheng Port Component

1. The financial internal rate of return (FIRR) for the port component (the construction and operation of berths 9 and 10) is computed in mid-2002 constant prices for the same project period (25 years from 1995 to 2020) using the same methodology as at appraisal, but based on (i) the actual capital costs; (ii) the traffic forecast revised based on the actual throughputs and ship calls; (iii) the assumed average revenue by type of business (foreign and domestic ship call, bulk and semi-bulk cargo handling, and container handling) taken from the actual figures of the Fangcheng Port Authority (FCPA); and (iv) the estimated incremental maintenance and operating costs reflecting the actual expenditure of FCPA. The capital costs exclude financial charges during construction. The business tax assumption remains unchanged, while income tax was not assumed at appraisal but at the project completion review. The bulkcargo-handling costs are assumed to grow in real terms by 3% every 3 years, while the container-handling costs are expected to decline by 0.5%, reflecting the efficiency of the operations. The average revenues are assumed to remain at the same level in constant prices for the project life as at the current level. At appraisal, both berths 9 and 10 were assumed to be partly in operation from 1998 and the capacity of each berth to be reached at the beginning of 1999. The appraisal estimate assumed both berths 9 and 10 were to achieve the full capacity operation from 1999 onward for the project life. The assumptions for the ship calls were not made available at appraisal.

2. Average revenue per ship call, average revenue from bulk cargo and container handling, and average cargo-handling cost from 1999 to 2001 were the actual figures in FCPA's overall operations at mid-2002 constant prices. From 2002 onward, the value is assumed to remain constant without any real increase for the project life. Average revenue per foreign and domestic ship call for 2002 is CNY43,000 against CNY18,180 at appraisal in mid-2002 prices and CNY13,040 against CNY15,080 at appraisal in mid-2002 prices, respectively. Average revenue from foreign and domestic bulk cargo per ton is CNY19.92 for 2002 against CNY37.16 at appraisal estimate in mid-2002 prices for foreign bulk cargo and CNY21.3 for 2002 against CNY19.6 at appraisal estimate in mid-2002 prices for domestic bulk cargo. For container revenue per twenty-foot equivalent unit (teu), CNY320.2 for 2002 against CNY462.9 at appraisal in mid-2002 prices is assumed. The tariffs have generally been lowered compared with at appraisal, reflecting the tougher competition due to oversupply and similar services available in other ports in the People's Republic of China (PRC).

3. Berth 9, designed for a 30,000 deadweight ton vessel, was opened to traffic in October 1999. In 2000, it was already overloaded, achieving 2.5 million tons of throughputs against 2.0 million of handling capacity. In 2001, the throughputs reached 3.03 million tons and the number of foreign and domestic ship calls was 62 and 17, respectively. Each figure showed more than 10% increase over the previous year. As the occupancy rate is still 50%, it is expected to accommodate more ships and further cargoes and is forecast to receive 70 foreign ships and 22 domestic ships handling 3.12 tons in 2004. Then, some excess capacity traffic is assumed to be designated to the other bulk cargo berths in FCPA. Therefore, 3.0 million tons of throughputs and 60 foreign and 18 domestic ship calls are likely to be maintained annually from 2005 to 2012. Then, the volume handled is expected to be gradually reduced to optimize the operating efficiency. For 2020, the annual throughputs are forecast at 2.77 million. The average annual throughputs and ship calls for the project life is estimated at 2.9 million, and 60 foreign and 17 domestic ship calls.

4. Berth 10 can accommodate up to a 25,000 deadweight tons of the third generation container vessel. Berth 10 was physically completed in October 2001, thus, has not had yet a full year of operation. Therefore, the target throughputs, which is 40,000 teu against 80,000 teu (or 640,000 tons) of its capacity, are taken as the results of 2002. Capital-intensive container operations have enabled berth 10 to receive 87 foreign ships and 48 ships for the first 4 months of 2002 at 52.3% of the occupation rate. The throughputs are assumed to grow by 18% per annum until they reach capacity in 2007. Thereafter, the throughput growth would decline to 15% per annum. The throughputs are expected to reach 83,000 teu in 2010. Thereafter, part traffic will be shifted to the other container berths, which will be completed by then. The ship calls are, on the other hand, expected to increase gradually as a result of the improving operating efficiency. Overall, berth 10 is assumed to operate at a full capacity from 2007 to 2020 with 80,964 teu on average. The average foreign and domestic ship calls for the project life are estimated at 204 and 116, respectively.

5. The real weighted average cost of capital (WACC) for the port component is estimated at 5.9% comprising the after-tax borrowing cost for each debt from China Development Bank and the Asian Development Bank (ADB), and the cost of capital injected from Ministry of Communications, the Guangxi Communications Department (GCD), Fangcheng municipality government, and FCPA. The cost of capital is calculated based on the current 30-year swap rate for United States dollar plus the prevailing margin imposed in the market on the PRC Government.

6. The reevaluated FIRR for the port component is 7.8%, which compares with 8.6% at appraisal (Table A10.1). Although the capital cost was only 64 % of the appraisal estimate in mid-2002 constant prices, the FIRR declined by 0.8%. This decline is attributable to the facts that (i) income tax has been included; (ii) the incremental operating and maintenance cost is 1.7 times larger than at appraisal; (iii) the commencement of the operation was delayed by 1 year for berth 9 and 3 years for berth 10; (iv) revenue in the first few months of operation was not included as it was not significant; (v) the cargo-handling capacity of berth 10 is forecast to be achieved only in 2007 instead of 1999; and (vi) lower tariffs prevailed than those assumed at appraisal. The port component of the Project is nevertheless considered financially viable exceeding the WACC, which is 5.9%. However, if each average revenue were reduced by 9.7%, the FIRR would be equalized with the WACC, being on the verge of financial viability.

7. The FIRR for FCPA on its capital investment in berths 9 and 10 is estimated at 45.7% against 6.0% of FCPA's WACC. This high-return investment derives from the small contribution (9.7%) of FCPA to the project cost in a leveraged project structure (72 % of debt) at relatively lower financing costs with the long maturity of the ADB loan. Utilizing effectively the borrowings, the port component is made highly beneficial to FCPA.

B. Highway Component (Qinfang Expressway)

8. At appraisal, the financial viability was assessed for a 45-kilometer (km) section[1] in the Nanning-Beihai national trunk expressway. The FIRR for the same section is computed in mid-2002 constant prices using the same methodology for the same project period as at appraisal, but based on the actual capital costs, the revised traffic forecast and the assumed toll, and the estimated recurring costs based on the actual expenditure in Qinfang Expressway from 1998 to 2001. The capital costs exclude financial charges during construction. The toll is assumed to remain at the same level in constant prices for the project life as at the current toll applicable

[1] ADB financed 20 km out of the 45 km section between Qinzhou and Fangcheng Port.

to each vehicle type. Qinfang Expressway is subject to business tax but not to income tax payment as it is owned and operated by GCD. The toll revenue and operating costs from 1998 to 2001 was actual and computed in mid-2002 prices. The operating costs are assumed to grow in real terms by 3% every 3 years. At appraisal, indirect revenue to the Communication Construction Fund of GCD from the expressway users at one fen per ton-km for freight and two fens per passenger-km was included. In applying the same methodology, the fee to the Communication Construction Fund at the current level in 2002 constant prices is included for the FIRR calculation. No real increase is assumed for the fee.

9. At appraisal, 7,000 vehicles per day were estimated for 2000, growing by 7% annually on average to reach 30,000 vehicles in 2020, which is the physical capacity of Qinfang Expressway. The actual average traffic in 2000 was approximately 4,950 vehicles per day, representing only 70% of the appraisal estimate. The composition of vehicle type also deviates from the appraisal estimate. Currently, 72% of traffic consisted of small vehicles less than 4 tons, while the appraisal traffic estimated it at 40%. The Project Completion Mission computed average annual daily traffic (AADT) in medium truck equivalents, taking into account of the actual number of vehicles observed by type and the distance between the toll gates and the total actual revenue. The computed AADT in medium truck equivalents for 2001 is 2,952 travelling the full length of Qinfang Expressway. The average toll paid is computed at CNY0.97 per medium truck equivalent per km, while the nominal toll for a 4-ton medium truck unit is CNY0.85 per km. The revised traffic growth is assumed to range from 4.0% to 7.0 %, at 6.44% on average, and AADT is expected to grow up to 9,649 in 2020. The current tolls applicable to Qinfang Expressway are as follows, in yuan per vehicle km: extra small vehicles (0.25), small vehicle (0.50), medium vehicle (0.85), large (1.60), and extra large (2.40).

10. The reevaluated FIRR for Qinfang Expressway is 6.6%, which compares with 5.7% at appraisal (Table A10.2). The WACC of the Qinfang Expressway is 6.5%. The FIRR has increased by 0.9% over the appraisal estimate. The main reason for such increase is identified as the current tolls that are higher than at appraisal approximately by 75%. The stronger revenue stream offset the revised lower traffic and the higher capital costs. Further, the shortened construction period, which started later but completed as scheduled, helped improve the FIRR. Qinfang Expressway is considered financially viable. The internal return to GCD is calculated at 10.0%, which is likely to be higher than GCD's real cost of capital estimated at 6.4%. GCD's investment on Qinfang Expressway is also considered successful, all the assumptions maintained.

C. Combined Components (Port and Highway)

11. Thetwo components combined, the FIRR of the Project is reevaluated at 6.8% against 6.3% of its WACC (Table A10.3). The FIRR of the Project compares with 6.9 % at appraisal. In conclusion, the Project is considered to have achieved the expected return at appraisal. Exceeding the WACC, the viability of the Project is also satisfactory.

Table A10.1: Financial Internal Rate of Return of Fangcheng Port Component
(CNY million)

Year	Cost						Revenue						
	Capital Cost	Major Rehabilitation / Equipment Replacement	Incremental Maintenance Cost	Incremental Operating Expenses	Business Tax	Income Tax	Cargo Handling Revenue (foreign bulk / semi-bulk cargo)	Cargo Handling Revenue (domestic bulk / semi-bulk cargo)	Cargo Handling Revenue (domestic and foreign container)	Ship Call Revenue (foreign)	Ship Call Revenue (domestic)	Other Revenue	Net Cash Flow
1995	0.0					0.0							0.0
1996	0.0					0.0							0.0
1997	55.3					0.0							(55.3)
1998	68.0					0.0							(68.0)
1999	62.4					0.0							(62.4)
2000	93.0		3.0	23.8	2.1	7.2	38.3	10.8	0.0	2.6	0.1	7.8	(69.5)
2001	87.3		7.0	28.7	2.5	2.5	46.5	13.1	0.0	2.6	0.2	9.4	(56.2)
2002	0.0		7.0	38.9	3.5	1.3	47.6	13.4	13.1	11.2	1.7	13.1	49.3
2003			7.0	40.6	3.6	1.2	47.1	13.3	14.4	11.4	1.7	13.2	48.8
2004			7.0	42.6	3.6	0.8	46.2	13.0	15.7	11.6	1.8	13.2	47.6
2005			7.0	43.9	3.5	0.0	43.1	12.1	17.1	11.3	1.7	12.8	43.8
2006			7.0	46.7	3.6	0.0	43.1	12.1	20.2	11.4	1.7	13.3	44.5
2007		0.4	7.0	47.3	3.6	0.0	43.1	12.1	20.8	11.5	1.8	13.4	44.3
2008		43.1	7.0	48.2	3.6	0.0	43.1	12.1	21.1	11.5	1.8	13.4	1.2
2009		79.0	7.0	48.5	3.6	0.2	43.1	12.1	21.4	11.6	1.8	13.5	(34.7)
2010		18.2	7.0	48.8	3.7	0.6	43.1	12.1	21.8	11.7	1.8	13.6	25.8
2011			7.0	49.0	3.7	0.4	43.1	12.1	21.3	11.8	1.8	13.5	43.7
2012			7.0	48.6	3.6	0.5	43.1	12.1	20.9	11.9	1.8	13.5	43.6
2013			7.0	48.1	3.6	0.6	42.7	12.0	20.7	12.0	1.8	13.4	43.2
2014			7.0	48.6	3.6	5.7	42.2	11.9	20.8	12.1	1.8	13.3	37.4
2015		2.8	7.0	48.4	3.6	5.8	41.8	11.8	20.9	12.2	1.9	13.3	34.2
2016			7.0	48.1	3.6	6.4	41.4	11.6	20.9	12.1	1.8	13.2	36.1
2017			7.0	48.4	3.5	6.4	41.0	11.5	20.9	12.2	1.9	13.1	35.3
2018			7.0	48.2	3.5	6.6	40.6	11.4	21.0	12.3	1.9	13.1	35.0
2019			7.0	48.0	3.5	6.8	40.2	11.3	21.1	12.3	1.9	13.0	34.5
2020	(78.0)		7.0	48.4	3.5	6.8	39.8	11.2	21.2	12.3	1.9	13.0	111.7
												FIRR	**7.8%**
												WACC	**5.9%**
												Appraisal	8.6%
												Internal Return to FCPA' investment	45.7%
												FCPA's WACC	6.0%

Table A10.2: Financial Internal Rate of Return of Fangcheng Highway Component (Qinfang Expressway)

(CNY million)

Year	Capital Cost	Major Rehabilitation and Equipment Replacement	Incremental Maintenance Cost	Incremental Operating Cost	Business Tax	Toll from Freight Vehicles	Toll from Passenger Vehicles	Indirect Toll Revenue	Net Cash Flow
1995	1.9		0.0	0.0	0.0	0.0	0.0	0.0	(1.9)
1996	274.7		0.0	0.0	0.0	0.0	0.0	0.0	(274.7)
1997	468.7		0.0	0.0	0.0	0.0	0.0	0.0	(468.7)
1998	205.6		1.0	2.3	2.0	23.1	16.7	11.4	(159.6)
1999	32.1		1.0	2.5	2.2	24.4	18.8	12.8	18.2
2000	10.9		1.2	3.5	2.3	26.1	19.9	13.8	42.0
2001	0.0		1.2	3.7	2.4	27.3	20.4	14.2	54.7
2002	0.0		1.2	3.7	2.5	28.1	21.4	14.8	57.0
2003			1.2	3.7	2.6	29.4	22.4	15.4	59.6
2004			1.2	3.7	2.7	30.8	23.5	16.2	62.9
2005			1.3	3.8	2.9	32.5	24.8	17.1	66.4
2006		0.0	1.3	3.8	3.0	34.3	26.4	18.2	70.8
2007		0.0	1.3	3.8	3.2	36.5	28.1	19.4	75.8
2008		31.4	1.3	3.9	3.5	39.1	30.1	20.8	49.8
2009		25.5	1.3	3.9	3.7	41.8	32.2	22.2	61.8
2010		22.4	1.3	3.9	4.0	44.8	34.5	23.8	71.4
2011		0.0	1.3	4.0	4.3	47.7	37.5	25.8	101.3
2012		0.0	1.3	4.0	4.6	51.3	40.3	27.7	109.3
2013		0.0	1.3	4.0	4.9	55.1	43.3	29.8	117.9
2014			1.4	4.2	5.3	59.2	46.5	32.0	127.0
2015			1.4	4.2	5.7	63.4	49.8	34.3	136.3
2016		0.0	1.4	4.2	6.1	66.6	54.5	37.3	146.9
2017		0.0	1.4	4.3	6.4	70.9	58.0	39.8	156.6
2018		31.4	1.4	4.3	6.9	75.6	61.8	42.3	135.7
2019		25.5	1.4	4.3	7.3	80.5	65.8	45.1	152.9
2020	(316.8)	0.0	1.5	4.4	7.8	85.7	70.1	48.0	507.0
								FIRR	**6.6%**
								WACC	**6.5%**
								Appraisal	5.7%
								Return to GPCD	10.0%
								GPCD's WACC	6.4%

Table A10.3: Financial Internal Rate of Return of the Project (Port and Highway Components Combined)
(CNY million)

Year	Capital Cost	Major Rehabilitation and Equipment Replacement	Incremental Maintenance Cost	Incremental Operating Cost	Business Tax	Income Tax	Revenue	Net Cash Flow
1995	1.9	0.0	0.0	0.0	0.0	0.0	0.0	(1.9)
1996	274.7	0.0	0.0	0.0	0.0	0.0	0.0	(274.7)
1997	524.0	0.0	0.0	0.0	0.0	0.0	0.0	(524.0)
1998	273.6	0.0	1.0	2.3	2.0	0.0	51.3	(227.7)
1999	94.5	0.0	1.0	2.5	2.2	0.0	56.0	(44.2)
2000	103.9	0.0	4.2	27.3	4.4	7.2	119.4	(27.5)
2001	87.3	0.0	8.2	32.4	4.9	2.5	133.8	(1.5)
2002	0.0	0.0	8.2	42.6	6.0	1.3	164.4	106.3
2003	0.0	0.0	8.2	44.3	6.1	1.2	168.3	108.4
2004	0.0	0.0	8.2	46.3	6.3	0.8	172.0	110.4
2005	0.0	0.0	8.2	47.7	6.3	0.0	172.5	110.2
2006	0.0	0.0	8.2	50.5	6.6	0.0	180.7	115.3
2007	0.0	0.4	8.2	51.1	6.8	0.0	186.7	120.1
2008	0.0	74.5	8.3	52.1	7.1	0.0	193.1	51.1
2009	0.0	104.5	8.3	52.4	7.3	0.2	199.8	27.2
2010	0.0	40.6	8.3	52.7	7.6	0.6	207.1	97.3
2011	0.0	0.0	8.3	53.0	7.9	0.4	214.6	145.0
2012	0.0	0.0	8.3	52.7	8.2	0.5	222.6	152.9
2013	0.0	0.0	8.3	52.2	8.5	0.6	230.8	161.1
2014	0.0	0.0	8.3	52.7	8.9	5.7	240.0	164.3
2015	0.0	2.8	8.3	52.5	9.2	5.8	249.2	170.5
2016	0.0	0.0	8.3	52.2	9.6	6.4	259.6	183.0
2017	0.0	0.0	8.4	52.7	10.0	6.4	269.4	191.9
2018	0.0	31.4	8.4	52.5	10.4	6.6	280.0	170.7
2019	0.0	25.5	8.4	52.3	10.8	6.8	291.2	187.4
2020	(394.8)	0.0	8.4	52.8	11.3	6.8	303.2	618.7
							FIRR	**6.8%**
							WACC	**6.3%**
							Appraisal	**6.9%**

ECONOMIC ANALYSIS

A. Port Component

1. General

1. The economic assessment is based on a “with” and “without” Project case. Under the “without” case, the existing port facilities will be used to their maximum capacity with an increasing degree of congestion at the berths and in the terminals. This would also result in decreased handling efficiency and long waiting time. Container traffic would have to be handled at nondedicated berths with lower handling efficiency. Ultimately, some traffic would be diverted to other ports—mainly Beihai and Zhanjiang—and transported overland at additional cost. Under the “with” the Project scenario, the additional specialized berths will enable cargo to be handed more efficiently.

2. Costs

2. The economic costs of implementing the Project have been estimated based on the financial cost of the capital expenditures, including physical contingencies. Price contingencies, interest during construction, and various taxes and duties have been excluded. A standard conversion factor of 0.926 was applied to calculate the economic price of nontradable goods from their financial price. All economic costs and benefits were estimated in the mid-2002 constant prices.

3. Benefits

3. The principal economic benefits of the Project are reduction in ship turnaround time and avoided overland transportation cost.

a. Ship Turnaround Time Savings

4. It is assumed that the full benefits arising from reduced ship turnaround time are accruing to the national economy without time-lag, thus a standard conversion factor has been applied to all economic benefits. For the container and bulk cargo traffic, time savings have been calculated for reduced time spent in the berth and waiting at anchor for a berth to become vacant. Without the Project, containers will be handled at a rate of 8 twenty-foot equivalent units (teu) per hour. With the Project, productivity is assumed to increase to 20 teu per hour per crane. On the basis of these container-handling rates, the time savings and required berth days for the “with” and “without” case have been calculated. The required ship service time in both cases have been multiplied with the ship cost per day, which are estimated to be CNY66,000 for the approximately half of 10,000 deadweight ton (dwt) container ships, and CNY91,000 for the 15,000 dwt constituting the other half of ships calling at Fangcheng.

5. Waiting-time savings have been calculated using the same methodology. For the conventional cargo berths the value of the total ship service time at berth and waiting at anchor for a vacant berth were calculated. For the time spent in the berth the same methodology as for the container traffic has been used. The waiting time savings were based on the forecast traffic for the port, conventional cargo handling rate, ship arrival, ship size, vessel operating cost and the berths occupancy rates. Given the berth occupancy rate and the appropriate queuing models waiting/service time ratios were estimated and used to calculate ship waiting time. The difference of the average ship waiting time in the “with” and “without” case was multiplied by the

average cost per day for an average conventional cargo ship: CNY39,000 for a 6,500 dwt vessel and Y20,000 for a 1,400 dwt vessel.

b. Avoided Transportation Cost

6. Without the Project, additional road transportation cost would be incurred because the port capacity (berth and yard) is not sufficient to handle all of the expected traffic. Consequently, when traffic exceeds the optimal operating capacity of the existing port facilities, it was assumed that 25% of the traffic would be diverted to Beihai Port and the remaining portion to Zhanjiang Port.[1] The traffic for berth 9 already reached its maximum capacity in 2001, while the traffic for the berth 10 is expected to reach its optimal capacity in 2007.

4. Economic Reevaluation Results

7. The economic internal rate of return (EIRR) of the port component was reevaluated on the basis of 23 years of operation after the project start-up, or an evaluation of period of 24 years (1997-2020). At appraisal, the EIRR was calculated at 21.2%. The EIRR for the port component has been recalculated at 33.5% (Table A11.1). The much higher EIRR compared with that of the appraisal evaluation was mainly due to decreased capital cost, which had been anticipated at appraisal to be disbursed more upfront and for a shorter period. The EIRR was subjected to a sensitivity analysis to test the effects of a (i) 10% increase in cost, (ii) 10% decrease in benefits, and (iii) a combination of the two scenarios. The port component project continues to be economically viable under these scenarios (Table A11.2), with an EIRR of 18.8% even under the most adverse scenario (10% capital cost increase and 10% benefit decrease).

B. Road Component

1. General

8. The economic evaluation of the Project is based on a comparison of the “with” and “without” Project case. In the “without” case, the existing road would be used until it reaches its capacity limit with an increasing degree of traffic congestion and mixture of fast and slow moving vehicles. Under the “with” Project scenario, the new highway—with improved horizontal and vertical alignments and four lanes—will be used extensively for traffic to and from the port and for intercity travel due to lower vehicle operating cost (voc) and shorter travel time. The existing road will be mostly used to serve local traffic and by slow-moving vehicles such as tractors.

2. Costs

9. The economic costs of implementing the Project have been estimated based on the financial cost of the capital expenditures, including physical contingencies. The economic analysis was conducted in the mid-2002 constant prices in yuan, using the domestic price numeraire. Price contingencies, interest during construction, and various taxes and duties have been excluded. Land has been shadow priced based on a multiple-crop index of agricultural products and conditions of annual average increase of production. Costs for cement have been

[1] The additional distance from Beihai and Zhanjiang to Nanning, the hub of cargo transport in the southwest part of the People’s Republic of China is 80 kilometers (km) and approximately 200 km, respectively. The avoided transport costs are assumed to be CNY6.8 per teu/km and CNY10 per ton of breakbulk.

converted using a commodity specific conversion factors of 0.7. A standard conversion factor of 0.926 has been used to derive economic costs.

3. Benefits

10. The principle sources of economic benefits from the Project are (i) savings in VOCs for vehicles using the new highway, which would otherwise have to travel on the existing road; and (ii) benefits from reduced congestion accruing to traffic that remains on the existing road after opening of the new highway. A standard conversion factor has been applied to all benefits. Considering possible toll rates and VOC savings including those VOC savings arising from distance savings, 60% of traffic is assumed to divert from the existing road to the new highway.

11. At present, a single-lane road provides vehicle access to the Fangcheng Port. The existing roads along the alignment proposed for the highway are typically Class 3 and 4 standard with design capacity of 200-2,000 medium truck units per day. The roads are characterized by steep gradients, low visibility, and closely spaced and tight radius bend, making it difficult for the mainly large commercial vehicles constituting the port traffic to maneuver around the tight bends.

12. Operating cost savings occur for vehicles diverted from the existing road to the new highway. Without the Project, vehicles would have to travel a longer distance and on rougher pavement. Benefits come from generated traffic by stimulated economic development as a result of the better road conditions. VOC savings include benefits from reduced congestion on the existing road after the opening of the new highway. The unit economic VOCs per vehicle type in the with- and without-Project scenarios were estimated by using updated values from the Highway Design and Maintenance Standard Model III VOC module. The total VOC savings were calculated on the basis of traffic projections for the new highway and the existing road.

4. Economic Reevaluation Results

13. At appraisal, the EIRR of the highway component was calculated at 21.4%. The EIRR has been recalculated at 14.7% (Table A11.3). The lower EIRR is mainly due to an increased capital cost by 37% compared with the appraisal estimate and a slower-than-expected traffic growth. The EIRR was subject to a sensitivity analysis to test the effects of possible unfavorable scenarios related to changes in key parameters. The analysis has indicated that the Project continues to be economically viable under the same scenarios in the port component (Table A11.4). The EIRR was calculated at 12.4%, close to the cut-off rate, under the most adverse scenario (10% cost increase and 10% benefit decrease). Careful monitoring of the traffic and project implementation is therefore recommended during project operation.

14. The combined EIRR for the port and the highway components together is estimated at 17.9% (Table A11.5).

Table A11.1: Port Component Economic Analysis
(in million yuan at mid-2002 constant prices)

Year	Cost					Benefits			Net Benefits
	Capital Cost	Asset Replacement	Incremental Maintenance	Additional Operating Cost	Total Cost	Ship Turn-around Time	Avoided Traffic Diversion	Total Benefits	
1995						0.00	0.00	0.00	0.00
1996						0.00	0.00	0.00	0.00
1997	49.77				49.77	0.00	0.00	0.00	(49.77)
1998	60.76				60.76	36.76	2.58	35.47	(25.29)
1999	54.90				54.90	84.58	12.08	87.12	32.22
2000	82.18		2.65	21.05	105.88	84.91	19.79	94.49	(11.39)
2001	77.67		6.20	25.54	109.41	85.42	28.26	102.12	(7.29)
2002			6.28	35.05	41.33	86.45	31.85	106.60	65.27
2003			6.40	37.23	43.63	88.18	34.48	110.72	67.09
2004			6.46	39.50	45.96	89.04	36.82	113.15	67.18
2005			6.53	41.10	47.63	89.91	39.21	116.27	68.64
2006			6.53	43.72	50.25	89.91	39.21	116.27	66.02
2007		0.41	6.53	44.26	51.20	89.91	39.21	116.27	65.07
2008		40.33	6.53	45.10	91.96	89.91	39.21	116.27	24.31
2009		73.96	6.53	45.37	125.86	89.91	39.21	116.27	(9.59)
2010		17.07	6.53	45.64	69.24	89.91	39.21	116.27	47.03
2011		0.00	6.53	45.86	52.39	89.91	39.21	116.27	63.88
2012		0.00	6.53	45.51	52.03	89.91	39.21	116.27	64.24
2013		0.00	6.53	45.05	51.58	89.91	39.21	116.27	64.69
2014		0.00	6.53	45.46	51.98	89.91	39.21	116.27	64.29
2015		2.62	6.53	45.26	54.41	89.91	39.21	116.27	61.86
2016		0.00	6.53	44.99	51.51	89.91	39.21	116.27	64.76
2017		0.00	6.53	45.30	51.83	89.91	39.21	116.27	64.44
2018		0.00	6.53	45.11	51.64	89.91	39.21	116.27	64.63
2019		0.00	6.53	44.92	51.45	89.91	39.21	116.27	64.82
2020	(73.03)	0.00	6.53	45.33	(21.18)	89.91	39.21	116.27	137.45
								EIRR	**33.5%**

Table A11.2: Port Component Sensitivity Analysis

Component	EIRR	SI [a]
1. Base Case	33.5%	
2. Increase in Costs (10%)	26.5%	2.11
3. Decrease in Benefits (10%)	25.8%	2.32
4. Combination of 2 and 3	19.6%	

EIRR = Economic Internal Rate of Return
SI = Sensitivity Indicator
[a] Sensitivity Indicator = $\frac{\text{Percentage Change in EIRR}}{\text{Percentage Change in Variable Tested}}$

Table A11.3: Highway Component Economic Analysis
(in million yuan at mid-2002 constant Prices)

Year	Cost			Benefits				Net Benefits
				VOC Savings				
				New Road		Existing Road Reduced Congestion	Total Benefits	
	Capital Cost	Operation and Maintenance	Total	Diverted Traffic	Distance Reduction			
1995	1.51		1.51					(1.51)
1996	240.53		240.53					(240.53)
1997	421.95		421.95					(421.95)
1998	183.61	2.99	186.59	53.48	18.75	9.03	72.93	(113.66)
1999	28.30	3.09	31.40	57.53	20.55	9.59	78.76	47.36
2000	9.66	4.13	13.78	63.94	22.69	10.31	87.32	73.53
2001		4.32	4.32	72.63	25.59	11.76	98.91	94.59
2002		4.42	4.42	84.00	30.10	12.60	114.10	109.68
2003		4.51	4.51	94.25	33.56	14.28	127.81	123.29
2004		4.56	4.56	103.82	36.77	15.86	140.60	136.04
2005		4.74	4.74	113.57	40.77	13.10	150.70	145.96
2006		4.74	4.74	122.30	43.68	13.83	161.62	156.88
2007		4.74	4.74	131.04	46.59	14.56	173.26	168.53
2008		4.88	4.88	140.50	50.23	15.29	184.91	180.03
2009		4.88	4.88	149.24	53.14	16.02	196.56	191.68
2010		4.88	4.88	155.06	55.33	17.47	204.57	199.69
2011		5.03	5.03	169.62	60.42	17.47	222.77	217.74
2012		5.03	5.03	184.18	65.52	18.93	242.42	237.40
2013		5.03	5.03	199.47	71.34	19.66	261.35	256.33
2014		5.18	5.18	214.03	76.44	21.11	280.28	275.10
2015		5.18	5.18	228.59	81.54	21.84	299.21	294.03
2016		5.18	5.18	243.88	87.36	22.57	318.14	312.96
2017		5.33	5.33	258.44	92.46	24.02	337.06	331.73
2018		5.33	5.33	273.00	97.55	24.75	355.99	350.66
2019		5.33	5.33	288.29	102.65	25.48	374.92	369.59
2020	(296.52)	5.49	(291.03)	302.85	108.47	26.94	393.85	684.88
							EIRR	**14.7%**

Table A11.4: Road Component Sensitivity Analysis

Component	EIRR	SI [a]
1.Base Case	14.7%	
2. Increase in Costs (10%)	13.6%	0.76
3. Decrease in Benefits (10%)	13.5%	0.83
4. Combination of 2 and 3	12.5%	

EIRR = Economic Internal Rate of Return
SI = Sensitivity Indicator

[a] Sensitivity Indicator (SI) = $\frac{\text{Percentage Change in EIRR}}{\text{Percentage Change in Variable Tested}}$

Table A11.5: Economic Analysis of the Combined Port and Highway Components (in million yuan at mid-2002 constant prices)

Year	Total Cost	Total Benefits	Net Benefits
1995	1.51		(1.51)
1996	240.53		(240.53)
1997	471.73	35.47	(436.26)
1998	247.36	160.05	(87.30)
1999	86.30	173.24	86.94
2000	119.66	189.44	69.78
2001	113.73	205.51	91.78
2002	45.75	224.82	179.07
2003	48.14	240.95	192.81
2004	50.52	256.87	206.35
2005	52.37	266.97	214.60
2006	54.99	277.89	222.90
2007	55.94	289.54	233.60
2008	96.84	301.18	204.35
2009	130.74	312.83	182.09
2010	74.12	320.84	246.72
2011	57.42	339.04	281.62
2012	57.06	358.70	301.64
2013	56.60	377.62	321.02
2014	57.16	396.55	339.39
2015	59.59	415.48	355.89
2016	56.69	434.41	377.72
2017	57.16	453.34	396.17
2018	56.97	472.26	415.29
2019	56.78	491.19	434.41
2020	(312.21)	393.85	706.06
		EIRR	17.9%